

SEQUENCE LISTING

<110> Donoho, Gregory
 Scoville, John
 Zambrowicz, Brian
 Cullinan, Emily
 Kieke, James A.
 Hu, Yi
 Turner, C. Alexander Jr.
 Walke, D. Wade

<120> Novel Human Transporter Proteins and
 Polynucleotides Encoding the Same

<130> Lex-0143-USA

<150> US 60/187,120

<151> 2000-03-06

<150> US 60/204,725

<151> 2000-05-16

<160> 40

<170> FastSEQ for Windows Version 4.0

<210> 1

<211> 1311

<212> DNA

<213> Homo sapiens

<400> 1

atgcagccac	ccccagacga	ggccccgcagg	gacatggccg	gggacaccca	gtgggtccagg	60
cccagatgcc	aggcatggac	ggggacgctg	ctgctgggca	cgtgccttct	gtactgcgcc	120
cgctccagca	tgcccatctg	caccgtctcc	atgagccagg	acttcggctg	gaacaagaag	180
gaggccggca	tcgtgtctcag	cagcttcttc	tggggctact	gcctgacaca	ggttggtggc	240
ggccacctcg	gggatcggt	tgggggtgag	aaggatcatc	tgctgtcagc	ctctgcctgg	300
ggctccatca	cggccgtcac	cccactgctc	gcccaccta	gcagtgcaca	cctggccttc	360
atgaccttct	cacgcatcct	catgggcttg	ctccaagggg	tttacttccc	tgccctgacc	420
agcctgctgt	cgcagaaggt	gcgggagagt	gagcagacct	tcacctacag	catcgtgggc	480
gccggctccc	agtttgggac	gctgtctgacc	ggggcggtgg	gctccctgct	cctggaatgg	540
tacggctggc	agagcatctt	ctatttctcc	ggcggcctca	ccttgctttg	ggtgtggtac	600
gtgtacaggt	acctgctgag	tgaaaaagat	ctcatcctgg	ccttggtgtg	cctggcccaa	660
agccggccgg	tgtccaggca	cagcagagtc	ccctggagac	ggctcttccg	gaagcctgct	720
gtctgggcag	ccgtcgtctc	ccagctctct	gcagcctgct	ccttcttcat	cctcctctcc	780
tggctgcccc	ccttcttcga	ggagaccttc	cccagcgcca	agggctggat	cttcaacgtg	840
gttccttggg	tgggtggcgt	tccggccagt	ctattcagcg	ggtttctctc	tgatcatctc	900
atcaatcagg	gttacagagc	catcacgggtg	cgggaagctca	tgcagggcat	gggccttggc	960
ctctccagcg	tctttgctct	gtgcctgggc	cacacctcca	gcttctgtga	gtctgtgggc	1020
tttgcatcag	cctccatcgg	cctccagacc	ttcaaccaca	gtggcatttc	tgttaacatc	1080
caggacttgg	ccccgtcctg	cgccggcttt	ctggttgggtg	tggccaacac	agccgggggc	1140
ttggcagggtg	tcgtgggtgt	gtgtctaggg	ggctacttga	tggagaccac	gggctcctgg	1200
acttgctgtg	tcaaccttgt	ggccatcatc	agcaacctgg	ggctgtgcac	cttcctgggtg	1260
tttgacaggg	ctcagagggt	ggacctgagc	tctacctatg	aggacctcta	g	1311

<210> 2

<211> 436

<212> PRT

<213> Homo sapiens

<400> 2

Met	Gln	Pro	Pro	Pro	Asp	Glu	Ala	Arg	Arg	Asp	Met	Ala	Gly	Asp	Thr	1	5	10	15
Gln	Trp	Ser	Arg	Pro	Glu	Cys	Gln	Ala	Trp	Thr	Gly	Thr	Leu	Leu	Leu	20	25	30	
Gly	Thr	Cys	Leu	Leu	Tyr	Cys	Ala	Arg	Ser	Ser	Met	Pro	Ile	Cys	Thr	35	40	45	
Val	Ser	Met	Ser	Gln	Asp	Phe	Gly	Trp	Asn	Lys	Lys	Glu	Ala	Gly	Ile	50	55	60	
Val	Leu	Ser	Ser	Phe	Phe	Trp	Gly	Tyr	Cys	Leu	Thr	Gln	Val	Val	Gly	65	70	75	80
Gly	His	Leu	Gly	Asp	Arg	Ile	Gly	Gly	Glu	Lys	Val	Ile	Leu	Leu	Ser	85	90	95	
Ala	Ser	Ala	Trp	Gly	Ser	Ile	Thr	Ala	Val	Thr	Pro	Leu	Leu	Ala	His	100	105	110	
Leu	Ser	Ser	Ala	His	Leu	Ala	Phe	Met	Thr	Phe	Ser	Arg	Ile	Leu	Met	115	120	125	
Gly	Leu	Leu	Gln	Gly	Val	Tyr	Phe	Pro	Ala	Leu	Thr	Ser	Leu	Leu	Ser	130	135	140	
Gln	Lys	Val	Arg	Glu	Ser	Glu	Arg	Ala	Phe	Thr	Tyr	Ser	Ile	Val	Gly	145	150	155	160
Ala	Gly	Ser	Gln	Phe	Gly	Thr	Leu	Leu	Thr	Gly	Ala	Val	Gly	Ser	Leu	165	170	175	
Leu	Leu	Glu	Trp	Tyr	Gly	Trp	Gln	Ser	Ile	Phe	Tyr	Phe	Ser	Gly	Gly	180	185	190	
Leu	Thr	Leu	Leu	Trp	Val	Trp	Tyr	Val	Tyr	Arg	Tyr	Leu	Leu	Ser	Glu	195	200	205	
Lys	Asp	Leu	Ile	Leu	Ala	Leu	Gly	Val	Leu	Ala	Gln	Ser	Arg	Pro	Val	210	215	220	
Ser	Arg	His	Ser	Arg	Val	Pro	Trp	Arg	Arg	Leu	Phe	Arg	Lys	Pro	Ala	225	230	235	240
Val	Trp	Ala	Ala	Val	Val	Ser	Gln	Leu	Ser	Ala	Ala	Cys	Ser	Phe	Phe	245	250	255	
Ile	Leu	Leu	Ser	Trp	Leu	Pro	Thr	Phe	Phe	Glu	Glu	Thr	Phe	Pro	Asp	260	265	270	
Ala	Lys	Gly	Trp	Ile	Phe	Asn	Val	Val	Pro	Trp	Leu	Val	Ala	Ile	Pro	275	280	285	
Ala	Ser	Leu	Phe	Ser	Gly	Phe	Leu	Ser	Asp	His	Leu	Ile	Asn	Gln	Gly	290	295	300	
Tyr	Arg	Ala	Ile	Thr	Val	Arg	Lys	Leu	Met	Gln	Gly	Met	Gly	Leu	Gly	305	310	315	320
Leu	Ser	Ser	Val	Phe	Ala	Leu	Cys	Leu	Gly	His	Thr	Ser	Ser	Phe	Cys	325	330	335	
Glu	Ser	Val	Val	Phe	Ala	Ser	Ala	Ser	Ile	Gly	Leu	Gln	Thr	Phe	Asn	340	345	350	
His	Ser	Gly	Ile	Ser	Val	Asn	Ile	Gln	Asp	Leu	Ala	Pro	Ser	Cys	Ala	355	360	365	
Gly	Phe	Leu	Phe	Gly	Val	Ala	Asn	Thr	Ala	Gly	Ala	Leu	Ala	Gly	Val	370	375	380	
Val	Gly	Val	Cys	Leu	Gly	Gly	Tyr	Leu	Met	Glu	Thr	Thr	Gly	Ser	Trp	385	390	395	400
Thr	Cys	Leu	Phe	Asn	Leu	Val	Ala	Ile	Ile	Ser	Asn	Leu	Gly	Leu	Cys	405	410	415	
Thr	Phe	Leu	Val	Phe	Gly	Gln	Ala	Gln	Arg	Val	Asp	Leu	Ser	Ser	Thr	420	425	430	
His	Glu	Asp	Leu													435			

<210> 3
 <211> 1179
 <212> DNA
 <213> Homo sapiens

 <400> 3

atgaccctga	caagcaggcg	ccaggacagt	caggaggcca	ggcccagtg	ccaggcatgg	60
acggggagcg	tgctgctggg	cacgtgcctt	ctgtactgcg	cccgtccag	catgcccac	120
tgcaccgtct	ccatgagcca	ggacttcggc	tggaacaaga	aggaggccgg	catcggtgct	180
agcagcttct	tctggggcta	ctgcctgaca	cagggttggtg	gcggccacct	cggggatcgg	240
attgggggtg	agaaggtcat	cctgctgtca	gcctctgcct	ggggctccat	cacggccgct	300
accccaactgc	tcgcccacct	gagcagtgcc	cacctggcct	tcattgacctt	ctcacgcac	360
ctcatgggct	tgctccaagg	ggttttacttc	cctgccctga	ccagcctgct	gtcgcagaag	420
gtgcgggaga	gtgagcgagc	cttcacctac	agcatcggtg	gcgccggctc	ccagtttggg	480
acgtgctga	ccggggcggt	gggctccctg	ctcctggaat	ggtacggctg	gcagagcatc	540
ttctatttct	ccggcgccct	caccttgctt	tggtgtggtg	acgtgtacag	gtacctgctg	600
agtgaaaaag	atctcatcct	ggccttgggt	gtcctggccc	aaagccggcc	ggtgtccagg	660
cacagcagag	tcccctggag	acggctcttc	cgggaagcctg	ctgtctgggc	agccgtcgct	720
tcccagctct	ctgcagcctg	ctcctttctc	atcctcctct	cctggctgcc	cacctttctc	780
gaggagacct	tcccgcagcg	caagggctgg	atcttcaacg	tggttccttg	gttggtggcg	840
attccggcca	gtctattcag	cgggtttctc	tctgatcatc	tcataaatca	gggttacaga	900
gccatcacgg	tgcggaagct	catgcagggc	atgggccttg	gcctctccag	cgtctttgct	960
ctgtgcctgg	gccacacctc	cagcttctgt	gagtcctgtg	tctttgcatc	agcctccatc	1020
ggcctccaga	ccttcaacca	cagtggcatt	tctgttaaca	tccaggactt	ggccccgtcc	1080
tgcgccgggt	ttctgttttg	tgtggccaac	acagccgggg	ccttggcagg	tgagggggcg	1140
gcctctgtgc	ccaggagtgc	ccctgtctgt	gggtttga			1179

<210> 4
 <211> 392
 <212> PRT
 <213> Homo sapiens

<400> 4

Met	Thr	Leu	Thr	Ser	Arg	Arg	Gln	Asp	Ser	Gln	Glu	Ala	Arg	Pro	Glu
1				5					10					15	
Cys	Gln	Ala	Trp	Thr	Gly	Thr	Leu	Leu	Gly	Thr	Cys	Leu	Leu	Tyr	
			20					25					30		
Cys	Ala	Arg	Ser	Ser	Met	Pro	Ile	Cys	Thr	Val	Ser	Met	Ser	Gln	Asp
		35					40					45			
Phe	Gly	Trp	Asn	Lys	Lys	Glu	Ala	Gly	Ile	Val	Leu	Ser	Ser	Phe	Phe
	50				55					60					
Trp	Gly	Tyr	Cys	Leu	Thr	Gln	Val	Val	Gly	Gly	His	Leu	Gly	Asp	Arg
65				70					75					80	
Ile	Gly	Gly	Glu	Lys	Val	Ile	Leu	Leu	Ser	Ala	Ser	Ala	Trp	Gly	Ser
			85					90						95	
Ile	Thr	Ala	Val	Thr	Pro	Leu	Leu	Ala	His	Leu	Ser	Ser	Ala	His	Leu
		100					105						110		
Ala	Phe	Met	Thr	Phe	Ser	Arg	Ile	Leu	Met	Gly	Leu	Leu	Gln	Gly	Val
	115					120					125				
Tyr	Phe	Pro	Ala	Leu	Thr	Ser	Leu	Leu	Ser	Gln	Lys	Val	Arg	Glu	Ser
	130				135					140					
Glu	Arg	Ala	Phe	Thr	Tyr	Ser	Ile	Val	Gly	Ala	Gly	Ser	Gln	Phe	Gly
145				150					155					160	
Thr	Leu	Leu	Thr	Gly	Ala	Val	Gly	Ser	Leu	Leu	Glu	Trp	Tyr	Gly	
			165					170					175		
Trp	Gln	Ser	Ile	Phe	Tyr	Phe	Ser	Gly	Gly	Leu	Thr	Leu	Leu	Trp	Val
	180						185					190			
Trp	Tyr	Val	Tyr	Arg	Tyr	Leu	Leu	Ser	Glu	Lys	Asp	Leu	Ile	Leu	Ala
	195					200					205				
Leu	Gly	Val	Leu	Ala	Gln	Ser	Arg	Pro	Val	Ser	Arg	His	Ser	Arg	Val
	210				215						220				
Pro	Trp	Arg	Arg	Leu	Phe	Arg	Lys	Pro	Ala	Val	Trp	Ala	Ala	Val	Val
225				230					235					240	
Ser	Gln	Leu	Ser	Ala	Ala	Cys	Ser	Phe	Phe	Ile	Leu	Leu	Ser	Trp	Leu
			245					250						255	
Pro	Thr	Phe	Phe	Glu	Glu	Thr	Phe	Pro	Asp	Ala	Lys	Gly	Trp	Ile	Phe
		260					265						270		
Asn	Val	Val	Pro	Trp	Leu	Val	Ala	Ile	Pro	Ala	Ser	Leu	Phe	Ser	Gly
	275					280						285			

Phe Leu Ser Asp His Leu Ile Asn Gln Gly Tyr Arg Ala Ile Thr Val
 290 295 300
 Arg Lys Leu Met Gln Gly Met Gly Leu Gly Leu Ser Ser Val Phe Ala
 305 310 315 320
 Leu Cys Leu Gly His Thr Ser Ser Phe Cys Glu Ser Val Val Phe Ala
 325 330 335
 Ser Ala Ser Ile Gly Leu Gln Thr Phe Asn His Ser Gly Ile Ser Val
 340 345 350
 Asn Ile Gln Asp Leu Ala Pro Ser Cys Ala Gly Phe Leu Phe Gly Val
 355 360 365
 Ala Asn Thr Ala Gly Ala Leu Ala Gly Glu Gly Arg Ala Ser Val Pro
 370 375 380
 Arg Ser Ser Pro Val Cys Gly Val
 385 390

<210> 5
 <211> 1197
 <212> DNA
 <213> Homo sapiens

<400> 5
 atgcagccac cccagacga ggcccgagg gacatggccg gggacaccca gtgggtccagg 60
 cccgagtgcc aggcattggac ggggacgctg ctgctgggca cgtgccttct gtactgcgcc 120
 cgctccagca tgcccatctg caccgtctcc atgagccagg acttcggctg gaacaagaag 180
 gagggccgga tcgtgctcag cagcttcttc tggggctact gcctgacaca ggttggtgggc 240
 ggccacctcg gggatcggat tgggggtgag aaggatcatcc tgctgtcagc ctctgcctgg 300
 ggctccatca cggccgtcac cccactgctc gccacactga gcagtgcaca cctggccttc 360
 atgaccttct cagcatcct catgggcttg ctccaagggg ttacttccc tgcctgacc 420
 agcctgctgt cgcagaagg ggggagagt gagcagcct tcacctacag catcgtgggc 480
 gccggctccc agtttgggac gctgctgacc gggcggttg gctccctgct cctggaatgg 540
 tacggctggc agagcatctt ctatttctcc ggcggcctca ccttgctttg ggtgtggtac 600
 gtgtacaggt acctgctgag tgaaaaagat ctcatcctgg ccttggtgtg cctggcccaa 660
 agccggccgg tgtccaggca cagcagagtc ccctggagac ggctcttccg gaagcctgct 720
 gtctgggcag ccgtcgtctc ccagctctct gcagcctgct ccttcttcat cctcctctcc 780
 tggtgcccac ctttcttcga ggagaccttc cccgacgcca agggctggat cttcaacgtg 840
 gttccttggt tgggtggcgt tccggccagt ctattcagcg ggtttctctc tgatcatctc 900
 atcaatcagg gttacagagc catcacggtg cggaagctca tgcagggcat gggccttggc 960
 ctctccagcg tctttgctct gtgctgggac cacacctcca gcttctgtga gtctgtggtc 1020
 tttgcatcag cctccatcgg cctccagacc ttcaaccaca gtggcatttc tgtaacatc 1080
 caggacttgg ccccgctcct cgccggcttt ctgtttggtg tggccaacac agccggggcc 1140
 ttggcaggtg aggggagggc ctctgtgccc aggagtcccc ctgtctgtgg ggtttga 1197

<210> 6
 <211> 398
 <212> PRT
 <213> Homo sapiens

<400> 6
 Met Gln Pro Pro Pro Asp Glu Ala Arg Arg Asp Met Ala Gly Asp Thr
 1 5 10 15
 Gln Trp Ser Arg Pro Glu Cys Gln Ala Trp Thr Gly Thr Leu Leu Leu
 20 25 30
 Gly Thr Cys Leu Leu Tyr Cys Ala Arg Ser Ser Met Pro Ile Cys Thr
 35 40 45
 Val Ser Met Ser Gln Asp Phe Gly Trp Asn Lys Lys Glu Ala Gly Ile
 50 55 60
 Val Leu Ser Ser Phe Phe Trp Gly Tyr Cys Leu Thr Gln Val Val Gly
 65 70 75 80
 Gly His Leu Gly Asp Arg Ile Gly Gly Glu Lys Val Ile Leu Leu Ser
 85 90 95
 Ala Ser Ala Trp Gly Ser Ile Thr Ala Val Thr Pro Leu Leu Ala His
 100 105 110
 Leu Ser Ser Ala His Leu Ala Phe Met Thr Phe Ser Arg Ile Leu Met

	115		120		125										
Gly	Leu	Leu	Gln	Gly	Val	Tyr	Phe	Pro	Ala	Leu	Thr	Ser	Leu	Leu	Ser
	130					135						140			
Gln	Lys	Val	Arg	Glu	Ser	Glu	Arg	Ala	Phe	Thr	Tyr	Ser	Ile	Val	Gly
145					150						155				160
Ala	Gly	Ser	Gln	Phe	Gly	Thr	Leu	Leu	Thr	Gly	Ala	Val	Gly	Ser	Leu
				165						170				175	
Leu	Leu	Glu	Trp	Tyr	Gly	Trp	Gln	Ser	Ile	Phe	Tyr	Phe	Ser	Gly	Gly
		180						185					190		
Leu	Thr	Leu	Leu	Trp	Val	Trp	Tyr	Val	Tyr	Arg	Tyr	Leu	Leu	Ser	Glu
	195						200					205			
Lys	Asp	Leu	Ile	Leu	Ala	Leu	Gly	Val	Leu	Ala	Gln	Ser	Arg	Pro	Val
	210					215					220				
Ser	Arg	His	Ser	Arg	Val	Pro	Trp	Arg	Arg	Leu	Phe	Arg	Lys	Pro	Ala
225					230					235					240
Val	Trp	Ala	Ala	Val	Val	Ser	Gln	Leu	Ser	Ala	Ala	Cys	Ser	Phe	Phe
				245						250				255	
Ile	Leu	Leu	Ser	Trp	Leu	Pro	Thr	Phe	Phe	Glu	Glu	Thr	Phe	Pro	Asp
			260					265					270		
Ala	Lys	Gly	Trp	Ile	Phe	Asn	Val	Val	Pro	Trp	Leu	Val	Ala	Ile	Pro
	275						280					285			
Ala	Ser	Leu	Phe	Ser	Gly	Phe	Leu	Ser	Asp	His	Leu	Ile	Asn	Gln	Gly
	290					295					300				
Tyr	Arg	Ala	Ile	Thr	Val	Arg	Lys	Leu	Met	Gln	Gly	Met	Gly	Leu	Gly
305					310					315					320
Leu	Ser	Ser	Val	Phe	Ala	Leu	Cys	Leu	Gly	His	Thr	Ser	Ser	Phe	Cys
				325					330					335	
Glu	Ser	Val	Val	Phe	Ala	Ser	Ala	Ser	Ile	Gly	Leu	Gln	Thr	Phe	Asn
			340					345					350		
His	Ser	Gly	Ile	Ser	Val	Asn	Ile	Gln	Asp	Leu	Ala	Pro	Ser	Cys	Ala
	355					360					365				
Gly	Phe	Leu	Phe	Gly	Val	Ala	Asn	Thr	Ala	Gly	Ala	Leu	Ala	Gly	Glu
	370					375				380					
Gly	Arg	Ala	Ser	Val	Pro	Arg	Ser	Ser	Pro	Val	Cys	Gly	Val		
385					390					395					

<210> 7
 <211> 855
 <212> DNA
 <213> Homo sapiens

<400> 7						
atgaccctga	caagcaggcg	ccaggacagt	caggaggcca	ggcccagagt	ccaggcatgg	60
acggggacgc	tgctgctggg	cacgtgcctt	ctgtactgcg	cccgtccag	catgcccac	120
tgcaccgtct	ccatgagcca	ggacttcggc	tggaaacaaga	aggaggccgg	catcgtgctc	180
agcagcttct	tctggggcta	ctgcctgaca	caggttggtg	gcggccacct	cggggatcgg	240
attgggggtg	agaaggtcat	cctgctgtca	gcctctgcct	ggggctccat	cacggccgtc	300
accccaactgc	tcgcccacct	gagcagtgcc	cacctggcct	tcattgacct	ctcacgcatc	360
ctcatgggct	tgctccaagg	ggtttacttc	cctgccctga	ccagcctgct	gtcgcagaag	420
gtgcgggaga	gtgagcgagc	cttcacctac	agcatcgtgg	gcgccggctc	ccagtttggg	480
acgctgctga	ccggggcggt	gggctccctg	ctcctgggaat	ggtacggctg	gcagagcatc	540
ttctatttct	ccggcggcct	caccttgctt	tgggtgtggg	acgtgtacag	atctcatcct	600
ggccttgggt	gtcctggccc	aaagccggcc	ggtgtccagg	cacagcagag	tcccctggag	660
acggctcttc	cggaagcctg	ctgtctgggc	agccgtcgtc	tcccagctct	ctgcagcctg	720
ctccttcttc	atcctcctct	cctggctgcc	caccttcttc	gaggagacct	tccccgacgc	780
caagggtctg	atcttcaacg	tggttccttg	ggttggtggc	attccggcca	gtctattcag	840
cgggtttctc	tctga					855

<210> 8
 <211> 284
 <212> PRT
 <213> Homo sapiens

<400> 8

Met Thr Leu Thr Ser Arg Arg Gln Asp Ser Gln Glu Ala Arg Pro Glu
1 5 10 15
Cys Gln Ala Trp Thr Gly Thr Leu Leu Leu Gly Thr Cys Leu Leu Tyr
20 25 30
Cys Ala Arg Ser Ser Met Pro Ile Cys Thr Val Ser Met Ser Gln Asp
35 40 45
Phe Gly Trp Asn Lys Lys Glu Ala Gly Ile Val Leu Ser Ser Phe Phe
50 55 60
Trp Gly Tyr Cys Leu Thr Gln Val Val Gly Gly His Leu Gly Asp Arg
65 70 75 80
Ile Gly Gly Glu Lys Val Ile Leu Leu Ser Ala Ser Ala Trp Gly Ser
85 90 95
Ile Thr Ala Val Thr Pro Leu Leu Ala His Leu Ser Ser Ala His Leu
100 105 110
Ala Phe Met Thr Phe Ser Arg Ile Leu Met Gly Leu Leu Gln Gly Val
115 120 125
Tyr Phe Pro Ala Leu Thr Ser Leu Leu Ser Gln Lys Val Arg Glu Ser
130 135 140
Glu Arg Ala Phe Thr Tyr Ser Ile Val Gly Ala Gly Ser Gln Phe Gly
145 150 155 160
Thr Leu Leu Thr Gly Ala Val Gly Ser Leu Leu Leu Glu Trp Tyr Gly
165 170 175
Trp Gln Ser Ile Phe Tyr Phe Ser Gly Leu Thr Leu Leu Trp Val
180 185 190
Trp Tyr Val Tyr Arg Ser His Pro Gly Leu Gly Cys Pro Gly Pro Lys
195 200 205
Pro Ala Gly Val Gln Ala Gln Gln Ser Pro Leu Glu Thr Ala Leu Pro
210 215 220
Glu Ala Cys Cys Leu Gly Ser Arg Arg Leu Pro Ala Leu Cys Ser Leu
225 230 235 240
Leu Leu Leu His Pro Pro Leu Leu Ala Ala His Leu Leu Arg Gly Asp
245 250 255
Leu Pro Arg Arg Gln Gly Leu Asp Leu Gln Arg Gly Ser Leu Val Gly
260 265 270
Gly Asp Ser Gly Gln Ser Ile Gln Arg Val Ser Leu
275 280

<210> 9

<211> 873

<212> DNA

<213> Homo sapiens

<400> 9

atgcagccac	ccccagacga	ggccccgcagg	gacatgggccg	gggacaccca	gtgggtccagg	60
cccagatgcc	aggcatggac	ggggacgctg	ctgctgggca	cgtgccttct	gtactgcgcc	120
cgctccagca	tgcccatctg	caccgtctcc	atgagccagg	acttcggctg	gaacaagaag	180
gaggccggca	tcgtgctcag	cagcttcttc	tggggctact	gcctgacaca	ggttggtggc	240
ggccacctcg	gggatcggat	tgggggtgag	aagggtcatcc	tgctgtcagc	ctctgcctgg	300
ggctccatca	cggccgtcac	cccactgctc	gcccacctga	gcagtgccca	cctggccttc	360
atgaccttct	cacgcatact	catgggcttg	ctccaagggg	tttacttccc	tgccctgacc	420
agcctgctgt	cgcagaaggt	gcgggagagt	gagcgagcct	tcacctacag	catcgtgggc	480
gccggctccc	agtttgggac	gctgctgacc	ggggcggtgg	gctccctgct	cctggaatgg	540
tacggctggc	agagcatctt	ctatttctcc	ggcggcctca	ccttgctttg	ggtgtggtac	600
gtgtacagat	ctcatcctgg	ccttggtgtg	ccttgcccaa	agccggccgg	tgtccaggca	660
cagcagagtc	ccctggagac	ggctcttccg	gaagcctgct	gtctgggcag	ccgtcgtctc	720
ccagctctct	gcagcctgct	ccttcttcat	cctcctctcc	tggtgcccc	ccttcttcga	780
ggagaccttc	cccagaccca	agggtctggat	cttcaacgtg	gttccttggt	tggtggcgat	840
tccggccagt	ctattcagcg	ggtttctctc	tga			873

<210> 10

<211> 290

<212> PRT

<213> Homo sapiens

<400> 10

Met Gln Pro Pro Pro Asp Glu Ala Arg Arg Asp Met Ala Gly Asp Thr
1 5 10 15
Gln Trp Ser Arg Pro Glu Cys Gln Ala Trp Thr Gly Thr Leu Leu Leu
20 25 30
Gly Thr Cys Leu Leu Tyr Cys Ala Arg Ser Ser Met Pro Ile Cys Thr
35 40 45
Val Ser Met Ser Gln Asp Phe Gly Trp Asn Lys Lys Glu Ala Gly Ile
50 55 60
Val Leu Ser Ser Phe Phe Trp Gly Tyr Cys Leu Thr Gln Val Val Gly
65 70 75 80
Gly His Leu Gly Asp Arg Ile Gly Gly Glu Lys Val Ile Leu Leu Ser
85 90 95
Ala Ser Ala Trp Gly Ser Ile Thr Ala Val Thr Pro Leu Leu Ala His
100 105 110
Leu Ser Ser Ala His Leu Ala Phe Met Thr Phe Ser Arg Ile Leu Met
115 120 125
Gly Leu Leu Gln Gly Val Tyr Phe Pro Ala Leu Thr Ser Leu Leu Ser
130 135 140
Gln Lys Val Arg Glu Ser Glu Arg Ala Phe Thr Tyr Ser Ile Val Gly
145 150 155 160
Ala Gly Ser Gln Phe Gly Thr Leu Leu Thr Gly Ala Val Gly Ser Leu
165 170 175
Leu Leu Glu Trp Tyr Gly Trp Gln Ser Ile Phe Tyr Phe Ser Gly Gly
180 185 190
Leu Thr Leu Leu Trp Val Trp Tyr Val Tyr Arg Ser His Pro Gly Leu
195 200 205
Gly Cys Pro Gly Pro Lys Pro Ala Gly Val Gln Ala Gln Gln Ser Pro
210 215 220
Leu Glu Thr Ala Leu Pro Glu Ala Cys Cys Leu Gly Ser Arg Arg Leu
225 230 235 240
Pro Ala Leu Cys Ser Leu Leu Leu Leu His Pro Pro Leu Leu Ala Ala
245 250 255
His Leu Leu Arg Gly Asp Leu Pro Arg Arg Gln Gly Leu Asp Leu Gln
260 265 270
Arg Gly Ser Leu Val Gly Gly Asp Ser Gly Gln Ser Ile Gln Arg Val
275 280 285
Ser Leu
290

<210> 11

<211> 1293

<212> DNA

<213> Homo sapiens

<400> 11

atgaccctga	caagcaggcg	ccaggacagt	caggaggcca	ggcccagagt	ccaggcatgg	60
acggggacgc	tgctgctggg	cacgtgcctt	ctgtactgcg	cccgtccag	catgcccata	120
tgcaccgtct	ccatgagcca	ggacttcggc	tggaacaaga	aggaggccgg	catcgtgctc	180
agcagcttct	tctggggcta	ctgcctgaca	caggttgctg	gcgccacct	cggggatcgg	240
attgggggtg	agaaggatcat	cctgctgtca	gcctctgcct	ggggctccat	cacggccgtc	300
accccactgc	tcgcccacct	gagcagtgcc	cacctggcct	tcatacactt	ctcacgcata	360
ctcatgggct	tgctccaagg	ggtttacttc	cctgccctga	ccagcctgct	gtcgcagaag	420
gtgcgggaga	gtgagcgagc	cttcacctac	agcatcgtgg	gcgcccggctc	ccagtttggg	480
acgctgctga	ccggggcggt	gggctccctg	ctcctggaat	ggtacggctg	gcagagcata	540
ttctatttct	ccggcgccct	caccttgctt	tgggtgtggt	acgtgtacag	gtacctgctg	600
agtgaaaaag	atctcatcct	ggccttgggt	gtcctggccc	aaagccggcc	ggtgtccagg	660
cacagcagag	tcccctggag	acggctcttc	cggaaagcctg	ctgtctgggc	agccgtcgtc	720
tcccagctct	ctgcagcctg	ctcctttctt	atcctcctct	cctggctgcc	caccttcttc	780
gaggagacct	tccccgacgc	caagggctgg	atcttcaacg	tggttccttg	gttgggtggcg	840
attccggcca	gtctattcag	cgggtttctc	tctgatcata	tcataatca	gggttacaga	900

```

gccatcacgg tgcggaagct catgcagggc atgggccttg gcctctccag cgtctttgct 960
ctgtgcctgg gccacacctc cagcttctgt gagtctgtgg tctttgcatc agcctccatc 1020
ggcctccaga ctttcaacca cagtggcatt tctgttaaca tccaggactt ggccccgtcc 1080
tgcgcccggct ttctgtttgg tgtggccaac acagccgggg ccttggcagg tgtcgtgggt 1140
gtgtgtctag gcggctactt gatggagacc acgggctcct ggacttgcct gttcaacctt 1200
gtggccatca tcagcaacct ggggctgtgc accttcctgg tgtttggaca ggctcagagg 1260
gtggacctga gctctaccca tgaggacctc tag 1293

```

<210> 12
 <211> 430
 <212> PRT
 <213> Homo sapiens

<400> 12

Met	Thr	Leu	Thr	Ser	Arg	Arg	Gln	Asp	Ser	Gln	Glu	Ala	Arg	Pro	Glu
1				5					10					15	
Cys	Gln	Ala	Trp	Thr	Gly	Thr	Leu	Leu	Leu	Gly	Thr	Cys	Leu	Leu	Tyr
			20					25					30		
Cys	Ala	Arg	Ser	Ser	Met	Pro	Ile	Cys	Thr	Val	Ser	Met	Ser	Gln	Asp
		35					40					45			
Phe	Gly	Trp	Asn	Lys	Lys	Glu	Ala	Gly	Ile	Val	Leu	Ser	Ser	Phe	Phe
	50				55					60					
Trp	Gly	Tyr	Cys	Leu	Thr	Gln	Val	Val	Gly	Gly	His	Leu	Gly	Asp	Arg
65				70					75					80	
Ile	Gly	Gly	Glu	Lys	Val	Ile	Leu	Leu	Ser	Ala	Ser	Ala	Trp	Gly	Ser
			85					90					95		
Ile	Thr	Ala	Val	Thr	Pro	Leu	Leu	Ala	His	Leu	Ser	Ser	Ala	His	Leu
			100					105					110		
Ala	Phe	Met	Thr	Phe	Ser	Arg	Ile	Leu	Met	Gly	Leu	Leu	Gln	Gly	Val
		115					120					125			
Tyr	Phe	Pro	Ala	Leu	Thr	Ser	Leu	Leu	Ser	Gln	Lys	Val	Arg	Glu	Ser
	130					135					140				
Glu	Arg	Ala	Phe	Thr	Tyr	Ser	Ile	Val	Gly	Ala	Gly	Ser	Gln	Phe	Gly
145					150				155					160	
Thr	Leu	Leu	Thr	Gly	Ala	Val	Gly	Ser	Leu	Leu	Glu	Trp	Tyr	Gly	
			165					170					175		
Trp	Gln	Ser	Ile	Phe	Tyr	Phe	Ser	Gly	Gly	Leu	Thr	Leu	Leu	Trp	Val
		180					185					190			
Trp	Tyr	Val	Tyr	Arg	Tyr	Leu	Leu	Ser	Glu	Lys	Asp	Leu	Ile	Leu	Ala
		195				200						205			
Leu	Gly	Val	Leu	Ala	Gln	Ser	Arg	Pro	Val	Ser	Arg	His	Ser	Arg	Val
	210				215						220				
Pro	Trp	Arg	Arg	Leu	Phe	Arg	Lys	Pro	Ala	Val	Trp	Ala	Ala	Val	Val
225				230						235				240	
Ser	Gln	Leu	Ser	Ala	Ala	Cys	Ser	Phe	Phe	Ile	Leu	Leu	Ser	Trp	Leu
			245					250						255	
Pro	Thr	Phe	Phe	Glu	Glu	Thr	Phe	Pro	Asp	Ala	Lys	Gly	Trp	Ile	Phe
		260						265					270		
Asn	Val	Val	Pro	Trp	Leu	Val	Ala	Ile	Pro	Ala	Ser	Leu	Phe	Ser	Gly
		275				280						285			
Phe	Leu	Ser	Asp	His	Leu	Ile	Asn	Gln	Gly	Tyr	Arg	Ala	Ile	Thr	Val
	290				295					300					
Arg	Lys	Leu	Met	Gln	Gly	Met	Gly	Leu	Gly	Leu	Ser	Ser	Val	Phe	Ala
305				310						315				320	
Leu	Cys	Leu	Gly	His	Thr	Ser	Ser	Phe	Cys	Glu	Ser	Val	Val	Phe	Ala
			325					330						335	
Ser	Ala	Ser	Ile	Gly	Leu	Gln	Thr	Phe	Asn	His	Ser	Gly	Ile	Ser	Val
		340					345					350			
Asn	Ile	Gln	Asp	Leu	Ala	Pro	Ser	Cys	Ala	Gly	Phe	Leu	Phe	Gly	Val
	355				360						365				
Ala	Asn	Thr	Ala	Gly	Ala	Leu	Ala	Gly	Val	Val	Gly	Val	Cys	Leu	Gly
	370				375						380				
Gly	Tyr	Leu	Met	Glu	Thr	Thr	Gly	Ser	Trp	Thr	Cys	Leu	Phe	Asn	Leu

385 390 395 400
Val Ala Ile Ile Ser Asn Leu Gly Leu Cys Thr Phe Leu Val Phe Gly
405 410 415
Gln Ala Gln Arg Val Asp Leu Ser Ser Thr His Glu Asp Leu
420 425 430

<210> 13
<211> 1311
<212> DNA
<213> homo sapiens

<400> 13
atgcagccac cccagacga ggcccgcagg gacatggccg gggacaccca gtggtccagg 60
cccgagtgcc aggcattggac ggggacgctg ctgctgggca cgtgccttct gtactgcgcc 120
cgctccagca tgcccatctg caccgtctcc atgagccagg acttcggctg gaacaagaag 180
gaggccggca tcgtgctcag cagcttcttc tggggctact gcctgacaca ggttggtggc 240
ggccacctcg gggatcggat tgggggtgag aaggatcatcc tgctgtcagc ctctgcctgg 300
ggctccatca cggccgtcac cccactgctc gccacctga gcagtgcaca cctggccttc 360
atgaccttct cagcatcct catgggcttg ctccaagggg ttacttccc tgccctgacc 420
agcctgctgt cgcagaaggt gcgggagagt gagcgagcct tcacctacag catcgtgggc 480
gccggctccc agtttgggac gctgctgacc gggcggtggt gctccctgct cctggaatgg 540
tacggctggc agagcatctt ctatttctcc ggcggcctca ccttgctttg ggtgtggtac 600
gtgtacaggt acctgctgag tgaaaaagat ctcatcctgg ccttggtgtg cctggcccaa 660
agccggccgg tgtccaggca cagcagatc ccctggagac ggctcttccg gaagcctgct 720
gtctgggcag ccgtcgtctc ccagctctct gcagcctgct ccttcttcat cctcctctcc 780
tggtgcccc ctttcttcga ggagaccttc cccgacgcca agggctggat cttcaacgtg 840
gttccttggg ttggtggcag tccggccagt ctattcagcg ggtttctctc tgatcatctc 900
atcaatcagg gttacagagc catcacggtg cggaaagctca tgcagggcat gggccttggc 960
ctctccagcg tctttgctct gtgcctgggc cacacctcca gcttctgtga gtctgtggtc 1020
tttgcattcag cctccatcgg cctccagacc ttcaaccaca gtggcatttc tgttaacatc 1080
caggacttgg ccccgctctg cgccggcttt ctgtttggtg tggccaacac agccggggcc 1140
ttggcagggt tcgtgggtgt gtgtctagga ggctacttga tggagaccac gggctcctgg 1200
acttgccctgt tcaacctgtt ggccatcatc agcaacctgg ggctgtgcac cttcctggtg 1260
tttggacagg ctacaggggt ggacctgagc tctaccatag aggacctcta g 1311

<210> 14
<211> 436
<212> PRT
<213> homo sapiens

<400> 14
Met Gln Pro Pro Pro Asp Glu Ala Arg Arg Asp Met Ala Gly Asp Thr
1 5 10 15
Gln Trp Ser Arg Pro Glu Cys Gln Ala Trp Thr Gly Thr Leu Leu Leu
20 25 30
Gly Thr Cys Leu Leu Tyr Cys Ala Arg Ser Ser Met Pro Ile Cys Thr
35 40 45
Val Ser Met Ser Gln Asp Phe Gly Trp Asn Lys Lys Glu Ala Gly Ile
50 55 60
Val Leu Ser Ser Phe Phe Trp Gly Tyr Cys Leu Thr Gln Val Val Gly
65 70 75 80
Gly His Leu Gly Asp Arg Ile Gly Gly Glu Lys Val Ile Leu Leu Ser
85 90 95
Ala Ser Ala Trp Gly Ser Ile Thr Ala Val Thr Pro Leu Leu Ala His
100 105 110
Leu Ser Ser Ala His Leu Ala Phe Met Thr Phe Ser Arg Ile Leu Met
115 120 125
Gly Leu Leu Gln Gly Val Tyr Phe Pro Ala Leu Thr Ser Leu Leu Ser
130 135 140
Gln Lys Val Arg Glu Ser Glu Arg Ala Phe Thr Tyr Ser Ile Val Gly
145 150 155 160
Ala Gly Ser Gln Phe Gly Thr Leu Leu Thr Gly Ala Val Gly Ser Leu

Leu	Leu	Glu	Trp	165	Tyr	Gly	Trp	Gln	Ser	170	Ile	Phe	Tyr	Phe	Ser	175	Gly	Gly
			180	Trp					185	Val	Tyr	Arg	Tyr	Leu	Leu	190	Ser	Glu
Leu	Thr	Leu	Leu	195	Trp	Val	Trp	Tyr	200	Val				205				
Lys	Asp	Leu	Ile	Leu	Ala	Leu	Gly	Val	Leu	Ala	Gln	Ser	Arg	Pro	Val			
	210					215					220							
Ser	Arg	His	Ser	Arg	Val	Pro	Trp	Arg	Arg	Leu	Phe	Arg	Lys	Pro	Ala			
	225				230					235					240			
Val	Trp	Ala	Ala	Val	Val	Ser	Gln	Leu	Ser	Ala	Ala	Cys	Ser	Phe	Phe			
				245					250					255				
Ile	Leu	Leu	Ser	Trp	Leu	Pro	Thr	Phe	Phe	Glu	Glu	Thr	Phe	Pro	Asp			
			260					265					270					
Ala	Lys	Gly	Trp	Ile	Phe	Asn	Val	Val	Pro	Trp	Leu	Val	Ala	Ile	Pro			
	275					280						285						
Ala	Ser	Leu	Phe	Ser	Gly	Phe	Leu	Ser	Asp	His	Leu	Ile	Asn	Gln	Gly			
	290				295					300								
Tyr	Arg	Ala	Ile	Thr	Val	Arg	Lys	Leu	Met	Gln	Gly	Met	Gly	Leu	Gly			
	305				310					315					320			
Leu	Ser	Ser	Val	Phe	Ala	Leu	Cys	Leu	Gly	His	Thr	Ser	Ser	Phe	Cys			
			325						330					335				
Glu	Ser	Val	Val	Phe	Ala	Ser	Ala	Ser	Ile	Gly	Leu	Gln	Thr	Phe	Asn			
			340					345					350					
His	Ser	Gly	Ile	Ser	Val	Asn	Ile	Gln	Asp	Leu	Ala	Pro	Ser	Cys	Ala			
	355					360						365						
Gly	Phe	Leu	Phe	Gly	Val	Ala	Asn	Thr	Ala	Gly	Ala	Leu	Ala	Gly	Val			
	370				375						380							
Val	Gly	Val	Cys	Leu	Gly	Gly	Tyr	Leu	Met	Glu	Thr	Thr	Gly	Ser	Trp			
	385				390					395					400			
Thr	Cys	Leu	Phe	Asn	Leu	Val	Ala	Ile	Ile	Ser	Asn	Leu	Gly	Leu	Cys			
			405					410						415				
Thr	Phe	Leu	Val	Phe	Gly	Gln	Ala	Gln	Arg	Val	Asp	Leu	Ser	Ser	Thr			
			420					425					430					
His	Glu	Asp	Leu															
			435															

<210> 15
 <211> 1179
 <212> DNA
 <213> homo sapiens

<400> 15																		
atgaccctga	caagcaggcg	ccaggacagt	caggaggcca	ggccccgagt	ccaggcatgg													60
acggggacgc	tgctgctggg	cacgtgcctt	ctgtactgcg	cccgtccag	catgcccac													120
tgcaccgtct	ccatgagcca	ggacttcggc	tggaacaaga	aggaggccgg	catcgtgctc													180
agcagcttct	tctggggcta	ctgcctgaca	cagggtgtgg	gcggccacct	cggggatcgg													240
attgggggtg	agaaggtcat	cctgctgtca	gcctctgcct	ggggctccat	cacggccgtc													300
acccactgc	tcgcccacct	gagcagtgcc	cacctggcct	tcatgacctt	ctcagccatc													360
ctcatgggct	tgctccaagg	ggtttacttc	cctgccctga	ccagcctgct	gtcgcagaag													420
gtgcggggaga	gtgagcgagc	cttcacctac	agcatcgtgg	gcgcgggctc	ccagtttggg													480
acgctgctga	ccggggcggt	gggctccctg	ctcctggaat	ggtacggctg	gcagagcatc													540
ttctatttct	ccggcgccct	caccttgctt	tgggtgtggt	acgtgtacag	gtacctgctg													600
agtgaaaaag	atctcatcct	ggccttgggt	gtcctggccc	aaagccggcc	ggtgtccagg													660
cacagcagag	tcccctggag	acggctcttc	cggaagcctg	ctgtctgggc	agccgtcgtc													720
tcccagctct	ctgcagcctg	ctccttcttc	atcctcctct	cctggctgcc	caccttcttc													780
gaggagacct	tccccgacgc	caagggctgg	atcttcaacg	tggttccttg	gttggtggcg													840
attccggcca	gtctattcag	cgggtttctc	tctgatcatc	tcatcaatca	gggttacaga													900
gccatcacgg	tgcggaagct	catgcagggc	atgggccttg	gcctctccag	cgtctttgct													960
ctgtgcctgg	gccacacctc	cagcttctgt	gagctctggt	tctttgcac	agcctccatc													1020
ggcctccaga	ccttcaacca	cagtggcatt	tctgttaaca	tccaggactt	ggccccgtcc													1080
tgcgccggct	ttctgtttgg	tgtggccaac	acagccgggg	ccttggcagg	tgaggggcgg													1140
gcctctgtgc	ccaggagtcc	ccctgtctgt	ggggtttga															1179

<210> 16
 <211> 392
 <212> PRT
 <213> homo sapiens

<400> 16

Met	Thr	Leu	Thr	Ser	Arg	Arg	Gln	Asp	Ser	Gln	Glu	Ala	Arg	Pro	Glu
1				5					10					15	
Cys	Gln	Ala	Trp	Thr	Gly	Thr	Leu	Leu	Leu	Gly	Thr	Cys	Leu	Leu	Tyr
			20					25					30		
Cys	Ala	Arg	Ser	Ser	Met	Pro	Ile	Cys	Thr	Val	Ser	Met	Ser	Gln	Asp
		35					40					45			
Phe	Gly	Trp	Asn	Lys	Lys	Glu	Ala	Gly	Ile	Val	Leu	Ser	Ser	Phe	Phe
	50					55					60				
Trp	Gly	Tyr	Cys	Leu	Thr	Gln	Val	Val	Gly	Gly	His	Leu	Gly	Asp	Arg
65					70					75					80
Ile	Gly	Gly	Glu	Lys	Val	Ile	Leu	Leu	Ser	Ala	Ser	Ala	Trp	Gly	Ser
				85					90					95	
Ile	Thr	Ala	Val	Thr	Pro	Leu	Leu	Ala	His	Leu	Ser	Ser	Ala	His	Leu
			100					105						110	
Ala	Phe	Met	Thr	Phe	Ser	Arg	Ile	Leu	Met	Gly	Leu	Leu	Gln	Gly	Val
		115					120					125			
Tyr	Phe	Pro	Ala	Leu	Thr	Ser	Leu	Leu	Ser	Gln	Lys	Val	Arg	Glu	Ser
	130					135					140				
Glu	Arg	Ala	Phe	Thr	Tyr	Ser	Ile	Val	Gly	Ala	Gly	Ser	Gln	Phe	Gly
145					150					155					160
Thr	Leu	Leu	Thr	Gly	Ala	Val	Gly	Ser	Leu	Leu	Leu	Glu	Trp	Tyr	Gly
				165					170					175	
Trp	Gln	Ser	Ile	Phe	Tyr	Phe	Ser	Gly	Gly	Leu	Thr	Leu	Leu	Trp	Val
			180					185					190		
Trp	Tyr	Val	Tyr	Arg	Tyr	Leu	Leu	Ser	Glu	Lys	Asp	Leu	Ile	Leu	Ala
		195					200					205			
Leu	Gly	Val	Leu	Ala	Gln	Ser	Arg	Pro	Val	Ser	Arg	His	Ser	Arg	Val
		210				215					220				
Pro	Trp	Arg	Arg	Leu	Phe	Arg	Lys	Pro	Ala	Val	Trp	Ala	Ala	Val	Val
225					230					235					240
Ser	Gln	Leu	Ser	Ala	Ala	Cys	Ser	Phe	Phe	Ile	Leu	Leu	Ser	Trp	Leu
				245					250					255	
Pro	Thr	Phe	Phe	Glu	Glu	Thr	Phe	Pro	Asp	Ala	Lys	Gly	Trp	Ile	Phe
			260				265						270		
Asn	Val	Val	Pro	Trp	Leu	Val	Ala	Ile	Pro	Ala	Ser	Leu	Phe	Ser	Gly
			275				280					285			
Phe	Leu	Ser	Asp	His	Leu	Ile	Asn	Gln	Gly	Tyr	Arg	Ala	Ile	Thr	Val
						295					300				
Arg	Lys	Leu	Met	Gln	Gly	Met	Gly	Leu	Gly	Leu	Ser	Ser	Val	Phe	Ala
305					310					315					320
Leu	Cys	Leu	Gly	His	Thr	Ser	Ser	Phe	Cys	Glu	Ser	Val	Val	Phe	Ala
				325					330					335	
Ser	Ala	Ser	Ile	Gly	Leu	Gln	Thr	Phe	Asn	His	Ser	Gly	Ile	Ser	Val
				340				345					350		
Asn	Ile	Gln	Asp	Leu	Ala	Pro	Ser	Cys	Ala	Gly	Phe	Leu	Phe	Gly	Val
		355					360					365			
Ala	Asn	Thr	Ala	Gly	Ala	Leu	Ala	Gly	Glu	Gly	Arg	Ala	Ser	Val	Pro
	370					375					380				
Arg	Ser	Ser	Pro	Val	Cys	Gly	Val								
385						390									

<210> 17
 <211> 1197
 <212> DNA
 <213> homo sapiens

<400> 17

atgcagccac	ccccagacga	ggccccgcagg	gacatggccg	gggacaccca	gtggtccagg	60
cccgagtgc	aggcatggac	ggggacgctg	ctgctgggca	cgtgccttct	gtactgcgc	120
cgtccagca	tgccatctg	caccgtctcc	atgagccagg	acttcggctg	gaacaagaag	180
gaggccggca	tcgtgctcag	cagcttcttc	tggggctact	gcctgacaca	ggttggtgggc	240
ggccacctcg	gggatcggat	tgggggtgag	aaggtcatcc	tgctgtcagc	ctctgcctgg	300
ggctccatca	cggcgcgtac	cccactgctc	gcccacctga	gcagtgcaca	cctggccttc	360
atgaccttct	cacgcacctt	catgggcttg	ctccaagggg	tttacttccc	tgccctgacc	420
agcctgctgt	cgcagaaggt	gcgggagagt	gagcgagcct	tcacctacag	catcggtggc	480
gccggctccc	agtttgggac	gctgctgacc	ggggcggttg	gctccctgct	cctggaatgg	540
tacggctggc	agagcatctt	ctatttctcc	ggcggcctca	ccttgctttg	ggtgtggtac	600
gtgtacaggt	acctgctgag	tgaaaaagat	ctcatcctgg	ccttggtgtg	cctggcccaa	660
agccggccgg	tgtccaggca	cagcagagtc	ccctggagac	ggctcttccg	gaagcctgct	720
gtctgggcag	ccgtcgtctc	ccagctctct	gcagcctgct	ccttcttcat	cctcctctcc	780
tggctgcccc	ccttcttcga	ggagaccttc	cccagcgcca	agggctggat	cttcaacgtg	840
gttccttggg	tgggtggcga	tccggccagt	ctattcagcg	ggtttctctc	tgatcatctc	900
atcaatcagg	gttacagagc	catcacggtg	cggaaagctca	tgcagggcat	gggccttggc	960
ctctccagcg	tctttgctct	gtgcctgggc	cacacctcca	gcttctgtga	gtctgtgggc	1020
tttgcatcag	cctccatcgg	cctccagacc	ttcaaccaca	gtggcatttc	tgttaacatc	1080
caggacttgg	ccccgtcctg	cgccggcttt	ctggttggtg	tggccaacac	agccgggggc	1140
ttggcaggtg	aggggcgggc	ctctgtgccc	aggagtcccc	ctgtctgtgg	ggtttga	1197

<210> 18

<211> 398

<212> PRT

<213> homo sapiens

<400> 18

Met	Gln	Pro	Pro	Pro	Asp	Glu	Ala	Arg	Arg	Asp	Met	Ala	Gly	Asp	Thr
1				5					10					15	
Gln	Trp	Ser	Arg	Pro	Glu	Cys	Gln	Ala	Trp	Thr	Gly	Thr	Leu	Leu	
			20					25					30		
Gly	Thr	Cys	Leu	Leu	Tyr	Cys	Ala	Arg	Ser	Ser	Met	Pro	Ile	Cys	Thr
		35					40					45			
Val	Ser	Met	Ser	Gln	Asp	Phe	Gly	Trp	Asn	Lys	Lys	Glu	Ala	Gly	Ile
	50					55					60				
Val	Leu	Ser	Ser	Phe	Phe	Trp	Gly	Tyr	Cys	Leu	Thr	Gln	Val	Val	Gly
65				70					75					80	
Gly	His	Leu	Gly	Asp	Arg	Ile	Gly	Gly	Glu	Lys	Val	Ile	Leu	Leu	Ser
				85				90						95	
Ala	Ser	Ala	Trp	Gly	Ser	Ile	Thr	Ala	Val	Thr	Pro	Leu	Leu	Ala	His
			100					105					110		
Leu	Ser	Ser	Ala	His	Leu	Ala	Phe	Met	Thr	Phe	Ser	Arg	Ile	Leu	Met
		115					120					125			
Gly	Leu	Leu	Gln	Gly	Val	Tyr	Phe	Pro	Ala	Leu	Thr	Ser	Leu	Leu	Ser
		130				135					140				
Gln	Lys	Val	Arg	Glu	Ser	Glu	Arg	Ala	Phe	Thr	Tyr	Ser	Ile	Val	Gly
145				150					155					160	
Ala	Gly	Ser	Gln	Phe	Gly	Thr	Leu	Leu	Thr	Gly	Ala	Val	Gly	Ser	Leu
				165					170					175	
Leu	Leu	Glu	Trp	Tyr	Gly	Trp	Gln	Ser	Ile	Phe	Tyr	Phe	Ser	Gly	Gly
		180					185					190			
Leu	Thr	Leu	Leu	Trp	Val	Trp	Tyr	Val	Tyr	Arg	Tyr	Leu	Leu	Ser	Glu
		195					200					205			
Lys	Asp	Leu	Ile	Leu	Ala	Leu	Gly	Val	Leu	Ala	Gln	Ser	Arg	Pro	Val
	210					215					220				
Ser	Arg	His	Ser	Arg	Val	Pro	Trp	Arg	Arg	Leu	Phe	Arg	Lys	Pro	Ala
225					230					235				240	
Val	Trp	Ala	Ala	Val	Val	Ser	Gln	Leu	Ser	Ala	Ala	Cys	Ser	Phe	Phe
				245					250					255	
Ile	Leu	Leu	Ser	Trp	Leu	Pro	Thr	Phe	Phe	Glu	Glu	Thr	Phe	Pro	Asp
			260					265					270		
Ala	Lys	Gly	Trp	Ile	Phe	Asn	Val	Val	Pro	Trp	Leu	Val	Ala	Ile	Pro
		275					280					285			

Ala Ser Leu Phe Ser Gly Phe Leu Ser Asp His Leu Ile Asn Gln Gly
 290 295 300
 Tyr Arg Ala Ile Thr Val Arg Lys Leu Met Gln Gly Met Gly Leu Gly
 305 310 315 320
 Leu Ser Ser Val Phe Ala Leu Cys Leu Gly His Thr Ser Ser Phe Cys
 325 330 335
 Glu Ser Val Val Phe Ala Ser Ala Ser Ile Gly Leu Gln Thr Phe Asn
 340 345 350
 His Ser Gly Ile Ser Val Asn Ile Gln Asp Leu Ala Pro Ser Cys Ala
 355 360 365
 Gly Phe Leu Phe Gly Val Ala Asn Thr Ala Gly Ala Leu Ala Gly Glu
 370 375 380
 Gly Arg Ala Ser Val Pro Arg Ser Ser Pro Val Cys Gly Val
 385 390 395

<210> 19
 <211> 855
 <212> DNA
 <213> homo sapiens

<400> 19
 atgaccctga caagcaggcg ccaggacagt caggaggcca ggcccagagt ccaggcatgg 60
 acggggacgc tgctgctggg cacgtgcctt ctgtactgcg cccgctccag catgcccatac 120
 tgcaccgtct ccatgagcca ggacttcggc tggaaacaaga aggaggccgg catcgtgtctc 180
 agcagcttct tctggggcta ctgcctgaca caggttggtg gcggccacct cggggatcgg 240
 attgggggtg agaaggtcat cctgctgtca gcctctgcct ggggctccat cacggccgtc 300
 accccactgc tcgcccacct gagcagtgcc cacctggcct tcatgacctt ctcacgcatac 360
 ctcattgggt tgctccaagg ggtttacttc cctgccctga ccagcctgct gtcgcagaag 420
 gtgcggggaga gtgagcgagc cttcacctac agcatcgtgg gcgccggctc ccagtttggg 480
 acgtgctga cggggcggt gggctccctg ctctctggaat ggtacggctg gcagagcatc 540
 ttctatttct cgggcggcct cacttgctt tgggtgtggt acgtgtacag atctcatcct 600
 ggccttgggt gtccctggccc aaagccggcc ggtgtccagg cacagcagag tcccctggag 660
 acggctcttc cggaagcctg ctgtctgggc agccgtcgtc tcccagctct ctgcagcctg 720
 ctcttcttc atcctcctct cctggctgcc cacttcttc gaggagacct tcccgcgcgc 780
 caagggtctg atcttcaacg tggttccttg gttggtggcg attccggcca gtctattcag 840
 cgggtttctc tctga 855

<210> 20
 <211> 284
 <212> PRT
 <213> homo sapiens

<400> 20
 Met Thr Leu Thr Ser Arg Arg Gln Asp Ser Gln Glu Ala Arg Pro Glu
 1 5 10 15
 Cys Gln Ala Trp Thr Gly Thr Leu Leu Gly Thr Cys Leu Leu Tyr
 20 25 30
 Cys Ala Arg Ser Ser Met Pro Ile Cys Thr Val Ser Met Ser Gln Asp
 35 40 45
 Phe Gly Trp Asn Lys Lys Glu Ala Gly Ile Val Leu Ser Ser Phe Phe
 50 55 60
 Trp Gly Tyr Cys Leu Thr Gln Val Val Gly Gly His Leu Gly Asp Arg
 65 70 75 80
 Ile Gly Gly Glu Lys Val Ile Leu Leu Ser Ala Ser Ala Trp Gly Ser
 85 90 95
 Ile Thr Ala Val Thr Pro Leu Leu Ala His Leu Ser Ser Ala His Leu
 100 105 110
 Ala Phe Met Thr Phe Ser Arg Ile Leu Met Gly Leu Leu Gln Gly Val
 115 120 125
 Tyr Phe Pro Ala Leu Thr Ser Leu Leu Ser Gln Lys Val Arg Glu Ser
 130 135 140
 Glu Arg Ala Phe Thr Tyr Ser Ile Val Gly Ala Gly Ser Gln Phe Gly
 145 150 155 160

Thr Leu Leu Thr Gly Ala Val Gly Ser Leu Leu Leu Glu Trp Tyr Gly
 165 170 175
 Trp Gln Ser Ile Phe Tyr Phe Ser Gly Gly Leu Thr Leu Leu Trp Val
 180 185 190
 Trp Tyr Val Tyr Arg Ser His Pro Gly Leu Gly Cys Pro Gly Pro Lys
 195 200 205
 Pro Ala Gly Val Gln Ala Gln Ser Pro Leu Glu Thr Ala Leu Pro
 210 215 220
 Glu Ala Cys Cys Leu Gly Ser Arg Arg Leu Pro Ala Leu Cys Ser Leu
 225 230 235 240
 Leu Leu Leu His Pro Pro Leu Leu Ala Ala His Leu Leu Arg Gly Asp
 245 250 255
 Leu Pro Arg Arg Gln Gly Leu Asp Leu Gln Arg Gly Ser Leu Val Gly
 260 265 270
 Gly Asp Ser Gly Gln Ser Ile Gln Arg Val Ser Leu
 275 280

<210> 21
 <211> 873
 <212> DNA
 <213> homo sapiens

<400> 21
 atgcagccac cccagacga gggccgcagg gacatggccg gggacaccca gtgggtccagg 60
 cccgagtgcc aggcattggac ggggacgtcg ctgctgggca cgtgccttct gtactgcgcc 120
 cgctccagca tgcccatctg caccgtctcc atgagccagg acttcggctg gaacaagaag 180
 gagggccggca tcgtgctcag cagcttcttc tggggctact gcttgacaca ggttggtggc 240
 ggccacctcg gggatcggat tgggggtgag aaggtcatcc tgctgtcagc ctctgcctgg 300
 ggctccatca cggccgtcac cccactgctc gccacactga gcagtgccca cctggccttc 360
 atgaccttct cagcctcct catgggcttg ctccaagggg ttacttccc tgccctgacc 420
 agcctgctgt cgcagaaggt gcgggagagt gagcgagcct tcacctacag catcgtgggc 480
 gccggctccc agtttgggac gctgctgacc ggggcgtgg gctccctgct cctggaatgg 540
 tacggctggc agagcatctt ctatttctcc ggcgccctca ccttgctttg ggtgtggtac 600
 gtgtacagat ctcatcctgg ccttgggtgt cctggcccaa agccggccgg tgtccaggca 660
 cagcagagtc ccctggagac ggctcttccg gaagcctgct gtctgggcag ccgtcgtctc 720
 ccagctctct gcagcctgct ccttcttcat cctcctctcc tggttgccca ccttcttcga 780
 ggagaccttc cccgacgcca agggctggat cttcaacgtg gttccttggt tgggtggcgat 840
 tccggccagt ctattcagcg ggttctctc tga 873

<210> 22
 <211> 290
 <212> PRT
 <213> homo sapiens

<400> 22
 Met Gln Pro Pro Asp Glu Ala Arg Arg Asp Met Ala Gly Asp Thr
 1 5 10 15
 Gln Trp Ser Arg Pro Glu Cys Gln Ala Trp Thr Gly Thr Leu Leu Leu
 20 25 30
 Gly Thr Cys Leu Leu Tyr Cys Ala Arg Ser Ser Met Pro Ile Cys Thr
 35 40 45
 Val Ser Met Ser Gln Asp Phe Gly Trp Asn Lys Lys Glu Ala Gly Ile
 50 55 60
 Val Leu Ser Ser Phe Phe Trp Gly Tyr Cys Leu Thr Gln Val Val Gly
 65 70 75 80
 Gly His Leu Gly Asp Arg Ile Gly Gly Glu Lys Val Ile Leu Leu Ser
 85 90 95
 Ala Ser Ala Trp Gly Ser Ile Thr Ala Val Thr Pro Leu Leu Ala His
 100 105 110
 Leu Ser Ser Ala His Leu Ala Phe Met Thr Phe Ser Arg Ile Leu Met
 115 120 125
 Gly Leu Leu Gln Gly Val Tyr Phe Pro Ala Leu Thr Ser Leu Leu Ser
 130 135 140

Gln Lys Val Arg Glu Ser Glu Arg Ala Phe Thr Tyr Ser Ile Val Gly
 145 150 155 160
 Ala Gly Ser Gln Phe Gly Thr Leu Leu Thr Gly Ala Val Gly Ser Leu
 165 170 175
 Leu Leu Glu Trp Tyr Gly Trp Gln Ser Ile Phe Tyr Phe Ser Gly Gly
 180 185 190
 Leu Thr Leu Leu Trp Val Trp Tyr Val Tyr Arg Ser His Pro Gly Leu
 195 200 205
 Gly Cys Pro Gly Pro Lys Pro Ala Gly Val Gln Ala Gln Gln Ser Pro
 210 215 220
 Leu Glu Thr Ala Leu Pro Glu Ala Cys Cys Leu Gly Ser Arg Arg Leu
 225 230 235 240
 Pro Ala Leu Cys Ser Leu Leu Leu Leu His Pro Pro Leu Leu Ala Ala
 245 250 255
 His Leu Leu Arg Gly Asp Leu Pro Arg Arg Gln Gly Leu Asp Leu Gln
 260 265 270
 Arg Gly Ser Leu Val Gly Gly Asp Ser Gly Gln Ser Ile Gln Arg Val
 275 280 285
 Ser Leu
 290

<210> 23
 <211> 1293
 <212> DNA
 <213> homo sapiens

<400> 23
 atgaccctga caagcaggcg ccaggacagt caggaggcca ggcccagagt ccaggcatgg 60
 acgggggacgc tgctgctggg cacgtgcctt ctgtactgcg cccgctccag catgcccatac 120
 tgcaccgtct ccatgagcca ggacttcggc tgggaacaaga aggaggccgg catcgtgctc 180
 agcagcttct tctggggcta ctgcctgaca caggttggtg gcggccacct cggggatcgg 240
 attgggggtg agaaggtcat cctgctgtca gcctctgcct ggggctccat cacggccgtc 300
 accccactgc tcgcccacct gagcagtgcc cacctggcct tcatgacctt ctacgcatac 360
 ctcattgggt tgctccaagg ggtttacttc cctgccctga ccagcctgct gtcgcagaag 420
 gtgcggggaga gtgagcgcgc ctacacctac agcatcgtgg gcgcgggctc ccagtttggg 480
 acgctgctga ccggggcggt gggctccctg ctccctggaat ggtacggctg gcagagcatc 540
 ttctatttct cgggcggcct cacttgctt tgggtgtggt acgtgtacag gtacctgtc 600
 agtgaaaaag atctcatcct ggccctgggt gtcctggccc aaagccggcc ggtgtccagg 660
 cacagcagag tcccctggag acggctcttc cggaagcctg ctgtctgggc agccgtcgtc 720
 tcccagctct ctgcagcctg ctccctcttc atccctctct cctggctgcc caccttcttc 780
 gaggagacct tccccgacgc caagggtctg atcttcaacg tggttccttg gttgggtggc 840
 attccggcca gtctattcag cgggtttctc tctgcatc tcattcaatc ggtttacaga 900
 gccatcacgg tcggaagct catgcagggc atgggccttg gcctctccag cgtctttgct 960
 ctgtgcctgg gccacacctc cagcttctgt gactctgttg tctttgcatc agcctccatc 1020
 ggctccaga cttcaacca cagtggcatt tctgttaaca tccaggactt ggcccgtcc 1080
 tgcgccggct ttctgttttg tgtggccaac acagccggg ccttggcagg tgtcgtgggt 1140
 gtgtgtctag gcggctactt gatggagacc acgggctcct ggacttgctt gttcaacctt 1200
 gtggccatca tcagcaacct ggggctgtgc accttctggt tgtttggaca ggctcagagg 1260
 gtggacctga gctctaccca tgaggacctc tag 1293

<210> 24
 <211> 430
 <212> PRT
 <213> homo sapiens

<400> 24
 Met Thr Leu Thr Ser Arg Arg Gln Asp Ser Gln Glu Ala Arg Pro Glu
 1 5 10 15
 Cys Gln Ala Trp Thr Gly Thr Leu Leu Gly Thr Cys Leu Leu Tyr
 20 25 30
 Cys Ala Arg Ser Ser Met Pro Ile Cys Thr Val Ser Met Ser Gln Asp
 35 40 45
 Phe Gly Trp Asn Lys Lys Glu Ala Gly Ile Val Leu Ser Ser Phe Phe

50	55	60
Trp Gly Tyr Cys Leu Thr Gln Val Val Gly Gly His Leu Gly Asp Arg		
65	70	75
Ile Gly Gly Glu Lys Val Ile Leu Leu Ser Ala Ser Ala Trp Gly Ser		80
	85	90
Ile Thr Ala Val Thr Pro Leu Leu Ala His Leu Ser Ser Ala His Leu		95
	100	105
Ala Phe Met Thr Phe Ser Arg Ile Leu Met Gly Leu Leu Gln Gly Val		110
	115	120
Tyr Phe Pro Ala Leu Thr Ser Leu Leu Ser Gln Lys Val Arg Glu Ser		125
	130	135
Glu Arg Ala Phe Thr Tyr Ser Ile Val Gly Ala Gly Ser Gln Phe Gly		140
145	150	155
Thr Leu Leu Thr Gly Ala Val Gly Ser Leu Leu Leu Glu Trp Tyr Gly		160
	165	170
Trp Gln Ser Ile Phe Tyr Phe Ser Gly Gly Leu Thr Leu Leu Trp Val		175
	180	185
Trp Tyr Val Tyr Arg Tyr Leu Leu Ser Glu Lys Asp Leu Ile Leu Ala		190
	195	200
Leu Gly Val Leu Ala Gln Ser Arg Pro Val Ser Arg His Ser Arg Val		205
	210	215
Pro Trp Arg Arg Leu Phe Arg Lys Pro Ala Val Trp Ala Ala Val Val		220
225	230	235
Ser Gln Leu Ser Ala Cys Ser Phe Phe Ile Leu Leu Ser Trp Leu		240
	245	250
Pro Thr Phe Phe Glu Glu Thr Phe Pro Asp Ala Lys Gly Trp Ile Phe		255
	260	265
Asn Val Val Pro Trp Leu Val Ala Ile Pro Ala Ser Leu Phe Ser Gly		270
	275	280
Phe Leu Ser Asp His Leu Ile Asn Gln Gly Tyr Arg Ala Ile Thr Val		285
	290	295
Arg Lys Leu Met Gln Gly Met Gly Leu Gly Leu Ser Ser Val Phe Ala		300
305	310	315
Leu Cys Leu Gly His Thr Ser Ser Phe Cys Glu Ser Val Val Phe Ala		320
	325	330
Ser Ala Ser Ile Gly Leu Gln Thr Phe Asn His Ser Gly Ile Ser Val		335
	340	345
Asn Ile Gln Asp Leu Ala Pro Ser Cys Ala Gly Phe Leu Phe Gly Val		350
	355	360
Ala Asn Thr Ala Gly Ala Leu Ala Gly Val Val Gly Val Cys Leu Gly		365
	370	375
Gly Tyr Leu Met Glu Thr Thr Gly Ser Trp Thr Cys Leu Phe Asn Leu		380
385	390	395
Val Ala Ile Ile Ser Asn Leu Gly Leu Cys Thr Phe Leu Val Phe Gly		400
	405	410
Gln Ala Gln Arg Val Asp Leu Ser Ser Thr His Glu Asp Leu		415
	420	425
		430

<210> 25
 <211> 1257
 <212> DNA
 <213> homo sapiens

<400> 25
 atgttccccca ggccagggggc attgtcctgg acagtcagga ggcatacccc tcgccagggtg 60
 gaaccaccct gtgtatgcat gaccctgaca agcaggcgcc aggacagtca ggaggccagg 120
 cccgagtgcc aggcattggac ggggacgctg ctgctgggca cgtgccttct gtactgcgcc 180
 cgctccagca tgcccatctg caccgtctcc atgagccagg acttcggctg gaacaagaag 240
 gaggccggca tcgtgctcag cagcttcttc tggggctact gcctgacaca ggttgtgggc 300
 ggccacctcg gggatcggat tgggggtgag aaggctatcc tgctgtcagc ctctgcctgg 360
 ggctccatca cggccgtcac cccactgctc gcccacctga gcagtgccca cctggccttc 420
 atgaccttct cagcatcct catgggcttg ctccaagggg ttacttccc tgccctgacc 480
 agcctgctgt cgcagaaggt gcgggagagt gagcgagcct tcacctacag catcgtgggc 540


```

gccggctccc agtttgggac gctgctgacc ggggcggtgg gctccctgct cctggaatgg      600
tacggctggc agagcatctt ctatttctcc ggcggcctca ccttgctttg ggtgtggtac      660
gtgtacaggt acctgctgag tgaaaaagat ctcatcctgg ccttggtgtg cctggcccaa      720
agccggccgg tgtccaggca cagcagagtc ccctggagac ggctcttccg gaagcctgct      780
gtctgggcag ccgtcgtctc ccagctctct gcagcctgct ccttcttcat cctcctctcc      840
tggctgcccc ctttcttcga ggagaccttc cccgacgcca agggctggat cttcaacgtg      900
gttccttggt tggtagcgat tccggccagt ctattcagcg gggttctctc tgatcatctc      960
atcaatcagg gttacagagc catcacggtg cggaagctca tgcagggcat gggccttggc     1020
ctctccagcg tctttgctct gtgcctgggc cacacctcca gcttctgtga gtctgtggtc     1080
tttgcatacag cctccatcgg cctccagacc ttcaaccaca gtggcatttc tgttaacatc     1140
caggacttgg ccccgctcctg cgccggcttt ctggttggtg tggccaacac agccggggcc     1200
ttggcaggtg aggggcgggc ctctgtgccc aggagtcccc ctgtctgtgg ggtttga      1257

```

<210> 26
 <211> 418
 <212> PRT
 <213> homo sapiens

```

<400> 26
Met Phe Pro Arg Pro Gly Ala Leu Ser Trp Thr Val Arg Arg His Thr
 1          5          10          15
Pro Arg Gln Val Glu Pro Pro Cys Val Cys Met Thr Leu Thr Ser Arg
      20          25          30
Arg Gln Asp Ser Gln Glu Ala Arg Pro Glu Cys Gln Ala Trp Thr Gly
      35          40          45
Thr Leu Leu Leu Gly Thr Cys Leu Leu Tyr Cys Ala Arg Ser Ser Met
      50          55          60
Pro Ile Cys Thr Val Ser Met Ser Gln Asp Phe Gly Trp Asn Lys Lys
      65          70          75          80
Glu Ala Gly Ile Val Leu Ser Ser Phe Phe Trp Gly Tyr Cys Leu Thr
      85          90          95
Gln Val Val Gly Gly His Leu Gly Asp Arg Ile Gly Gly Glu Lys Val
      100          105          110
Ile Leu Leu Ser Ala Ser Ala Trp Gly Ser Ile Thr Ala Val Thr Pro
      115          120          125
Leu Leu Ala His Leu Ser Ser Ala His Leu Ala Phe Met Thr Phe Ser
      130          135          140
Arg Ile Leu Met Gly Leu Leu Gln Gly Val Tyr Phe Pro Ala Leu Thr
      145          150          155          160
Ser Leu Leu Ser Gln Lys Val Arg Glu Ser Glu Arg Ala Phe Thr Tyr
      165          170          175
Ser Ile Val Gly Ala Gly Ser Gln Phe Gly Thr Leu Leu Thr Gly Ala
      180          185          190
Val Gly Ser Leu Leu Leu Glu Trp Tyr Gly Trp Gln Ser Ile Phe Tyr
      195          200          205
Phe Ser Gly Gly Leu Thr Leu Leu Trp Val Trp Tyr Val Tyr Arg Tyr
      210          215          220
Leu Leu Ser Glu Lys Asp Leu Ile Leu Ala Leu Gly Val Leu Ala Gln
      225          230          235          240
Ser Arg Pro Val Ser Arg His Ser Arg Val Pro Trp Arg Arg Leu Phe
      245          250          255
Arg Lys Pro Ala Val Trp Ala Ala Val Val Ser Gln Leu Ser Ala Ala
      260          265          270
Cys Ser Phe Phe Ile Leu Leu Ser Trp Leu Pro Thr Phe Phe Glu Glu
      275          280          285
Thr Phe Pro Asp Ala Lys Gly Trp Ile Phe Asn Val Val Pro Trp Leu
      290          295          300
Val Ala Ile Pro Ala Ser Leu Phe Ser Gly Phe Leu Ser Asp His Leu
      305          310          315          320
Ile Asn Gln Gly Tyr Arg Ala Ile Thr Val Arg Lys Leu Met Gln Gly
      325          330          335
Met Gly Leu Gly Leu Ser Ser Val Phe Ala Leu Cys Leu Gly His Thr
      340          345          350

```

Ser Ser Phe Cys Glu Ser Val Val Phe Ala Ser Ala Ser Ile Gly Leu
 355 360 365
 Gln Thr Phe Asn His Ser Gly Ile Ser Val Asn Ile Gln Asp Leu Ala
 370 375 380
 Pro Ser Cys Ala Gly Phe Leu Phe Gly Val Ala Asn Thr Ala Gly Ala
 385 390 395 400
 Leu Ala Gly Glu Gly Arg Ala Ser Val Pro Arg Ser Ser Pro Val Cys
 405 410 415
 Gly Val

<210> 27
 <211> 1068
 <212> DNA
 <213> homo sapiens

<400> 27
 atgcccatct gcaccgtctc catgagccag gacttcggct ggaacaagaa ggaggccggc 60
 atcgtgctca gcagcttctt ctggggctac tgcctgacac aggttggtgg cggccacctc 120
 ggggatcggg ttgggggtga gaaggatcat ctgctgtcag cctctgcctg gggctccatc 180
 acggccgtca cccactgct cgccacactg agcagtgcc acctggcctt catgaccttc 240
 tcacgcatcc tcatgggctt gctccaagg gtttacttcc ctgccctgac cagcctgctg 300
 tcgcagaagg tgcgggagag tgagcgagcc ttcacctaca gcatcgtggg cgccggctcc 360
 cagtttggga cgctgctgac cggggcggtg ggctccctgc tcctggaatg gtacggctgg 420
 cagagcatct tctatttctc cggcggcctc accttgcttt ggggtgtggt cgtgtacagg 480
 tacctgctga gtgaaaaaga tctcatcctg gccttggtg tcctggccca aagccggccg 540
 gtgtccaggc acagcagagt cccctggaga cggtcttcc ggaagcctgc tgtctgggca 600
 gccgtcgtct cccagctctc tgcagcctgc tccttcttca tcctcctctc ctggctgcc 660
 accttcttcg aggagacctt ccccgacgcc aagggtgga tcttcaacct gggttccttg 720
 ttgggtggcg ttccggccag tctattcagc ggggttctct ctgatcatct catcaatcag 780
 gggttacagc ccatcacggt gcggaagctc atgcagggca tgggccttgg cctctccagc 840
 gtctttgctc tgtgctggg ccacacctcc agcttctgtg agtctgtggt ctttgcac 900
 gctccatcg gctccagac cttcaaccac agtggcattt ctgttaacat ccaggacttg 960
 gccccgtcct gcgcgggctt tctgtttggt gtggccaaca cagccggggc cttggcaggt 1020
 gagggcggg cctctgtgcc caggagtcc cctgtctgtg ggggttga 1068

<210> 28
 <211> 355
 <212> PRT
 <213> homo sapiens

<400> 28
 Met Pro Ile Cys Thr Val Ser Met Ser Gln Asp Phe Gly Trp Asn Lys
 1 5 10 15
 Lys Glu Ala Gly Ile Val Leu Ser Ser Phe Phe Trp Gly Tyr Cys Leu
 20 25 30
 Thr Gln Val Val Gly Gly His Leu Gly Asp Arg Ile Gly Glu Lys
 35 40 45
 Val Ile Leu Leu Ser Ala Ser Ala Trp Gly Ser Ile Thr Ala Val Thr
 50 55 60
 Pro Leu Leu Ala His Leu Ser Ser Ala His Leu Ala Phe Met Thr Phe
 65 70 75 80
 Ser Arg Ile Leu Met Gly Leu Leu Gln Gly Val Tyr Phe Pro Ala Leu
 85 90 95
 Thr Ser Leu Leu Ser Gln Lys Val Arg Glu Ser Glu Arg Ala Phe Thr
 100 105 110
 Tyr Ser Ile Val Gly Ala Gly Ser Gln Phe Gly Thr Leu Leu Thr Gly
 115 120 125
 Ala Val Gly Ser Leu Leu Leu Glu Trp Tyr Gly Trp Gln Ser Ile Phe
 130 135 140
 Tyr Phe Ser Gly Gly Leu Thr Leu Leu Trp Val Trp Tyr Val Tyr Arg
 145 150 155 160
 Tyr Leu Leu Ser Glu Lys Asp Leu Ile Leu Ala Leu Gly Val Leu Ala

				165					170					175			
Gln	Ser	Arg	Pro	Val	Ser	Arg	His	Ser	Arg	Val	Pro	Trp	Arg	Arg	Leu		
			180					185					190				
Phe	Arg	Lys	Pro	Ala	Val	Trp	Ala	Ala	Val	Val	Ser	Gln	Leu	Ser	Ala		
		195					200					205					
Ala	Cys	Ser	Phe	Phe	Ile	Leu	Leu	Ser	Trp	Leu	Pro	Thr	Phe	Phe	Glu		
	210					215					220						
Glu	Thr	Phe	Pro	Asp	Ala	Lys	Gly	Trp	Ile	Phe	Asn	Val	Val	Pro	Trp		
225				230						235				240			
Leu	Val	Ala	Ile	Pro	Ala	Ser	Leu	Phe	Ser	Gly	Phe	Leu	Ser	Asp	His		
			245					250						255			
Leu	Ile	Asn	Gln	Gly	Tyr	Arg	Ala	Ile	Thr	Val	Arg	Lys	Leu	Met	Gln		
		260						265					270				
Gly	Met	Gly	Leu	Gly	Leu	Ser	Ser	Val	Phe	Ala	Leu	Cys	Leu	Gly	His		
	275					280					285						
Thr	Ser	Ser	Phe	Cys	Glu	Ser	Val	Val	Phe	Ala	Ser	Ala	Ser	Ile	Gly		
290					295						300						
Leu	Gln	Thr	Phe	Asn	His	Ser	Gly	Ile	Ser	Val	Asn	Ile	Gln	Asp	Leu		
305				310						315				320			
Ala	Pro	Ser	Cys	Ala	Gly	Phe	Leu	Phe	Gly	Val	Ala	Asn	Thr	Ala	Gly		
			325					330						335			
Ala	Leu	Ala	Gly	Glu	Gly	Arg	Ala	Ser	Val	Pro	Arg	Ser	Ser	Pro	Val		
			340					345					350				
Cys	Gly	Val															
		355															

<210> 29
 <211> 933
 <212> DNA
 <213> homo sapiens

<400> 29
 atgttccccca ggccagggggc attgtcctgg acagtcagga ggcatacccc tcgccagggtg 60
 gaaccaccct gtgtatgcat gaccctgaca agcaggcgcc aggacagtca ggaggccagg 120
 cccgagtgcc aggcattggac ggggacgctg ctgctgggca cgtgccttct gtactgcgcc 180
 cgctccagca tgcccatctg caccgtctcc atgagccagg acttcggctg gaacaagaag 240
 gaggccggca tegtgtcag cagcttcttc tggggctact gctgacaca gggtgtgggc 300
 ggccacctcg gggatcggat tgggggtgag aaggtcatcc tgctgtcagc ctctgcctgg 360
 ggctccatca cggcgtcac cccactgctc gccacactga gcagtgccca cctggccttc 420
 atgaccttct cagcatcct catgggcttg ctccaagggg tttacttccc tgccctgacc 480
 agcctgctgt cgcagaaggt gcgggagagt gagcgagcct tcacctacag catcgtgggc 540
 gccggctccc agtttgggac gctgctgacc ggggcgggtg gctccctgct cctggaatgg 600
 tacggctggc agagcatctt ctatttctcc ggcgccctca ccttgctttg ggtgtggtac 660
 gtgtacagat ctcatcctgg ccttgggtgt cctggcccaa agccggccgg tgtccaggca 720
 cagcagagtc cctggagac ggctcttccg gaagcctgct gtctgggcag ccgtcgtctc 780
 ccagctctct gcagcctgct ccttcttcat cctcctctcc tggctgcca ccttcttcca 840
 ggagaccttc cccgacgcca agggctggat cttcaacgtg gttccttggg tgggtggcgat 900
 tccggccagt ctattcagcg ggtttctctc tga 933

<210> 30
 <211> 310
 <212> PRT
 <213> homo sapiens

<400> 30
 Met Phe Pro Arg Pro Gly Ala Leu Ser Trp Thr Val Arg Arg His Thr
 1 5 10 15
 Pro Arg Gln Val Glu Pro Pro Cys Val Cys Met Thr Leu Thr Ser Arg
 20 25 30
 Arg Gln Asp Ser Gln Glu Ala Arg Pro Glu Cys Gln Ala Trp Thr Gly
 35 40 45
 Thr Leu Leu Leu Gly Thr Cys Leu Leu Tyr Cys Ala Arg Ser Ser Met
 50 55 60

Pro Ile Cys Thr Val Ser Met Ser Gln Asp Phe Gly Trp Asn Lys Lys
 65 70 75 80
 Glu Ala Gly Ile Val Leu Ser Ser Phe Phe Trp Gly Tyr Cys Leu Thr
 85 90 95
 Gln Val Val Gly Gly His Leu Gly Asp Arg Ile Gly Gly Glu Lys Val
 100 105 110
 Ile Leu Leu Ser Ala Ser Ala Trp Gly Ser Ile Thr Ala Val Thr Pro
 115 120 125
 Leu Leu Ala His Leu Ser Ser Ala His Leu Ala Phe Met Thr Phe Ser
 130 135 140
 Arg Ile Leu Met Gly Leu Leu Gln Gly Val Tyr Phe Pro Ala Leu Thr
 145 150 155 160
 Ser Leu Leu Ser Gln Lys Val Arg Glu Ser Glu Arg Ala Phe Thr Tyr
 165 170 175
 Ser Ile Val Gly Ala Gly Ser Gln Phe Gly Thr Leu Leu Thr Gly Ala
 180 185 190
 Val Gly Ser Leu Leu Leu Glu Trp Tyr Gly Trp Gln Ser Ile Phe Tyr
 195 200 205
 Phe Ser Gly Gly Leu Thr Leu Leu Trp Val Trp Tyr Val Tyr Arg Ser
 210 215 220
 His Pro Gly Leu Gly Cys Pro Gly Pro Lys Pro Ala Gly Val Gln Ala
 225 230 235 240
 Gln Gln Ser Pro Leu Glu Thr Ala Leu Pro Glu Ala Cys Cys Leu Gly
 245 250 255
 Ser Arg Arg Leu Pro Ala Leu Cys Ser Leu Leu Leu Leu His Pro Pro
 260 265 270
 Leu Leu Ala Ala His Leu Leu Arg Gly Asp Leu Pro Arg Arg Gln Gly
 275 280 285
 Leu Asp Leu Gln Arg Gly Ser Leu Val Gly Gly Asp Ser Gly Gln Ser
 290 295 300
 Ile Gln Arg Val Ser Leu
 305 310

<210> 31
 <211> 744
 <212> DNA
 <213> homo sapiens

<400> 31
 atgcccatct gcaccgtctc catgagccag gacttcggct ggaacaagaa ggaggccggc 60
 atcgtgctca gcagcttctt ctgggggtac tgccctgacac aggttgtggtg cggccacctc 120
 ggggatcgga ttgggggtga gaaggtcacc ctgctgtcag cctctgcctg gggctccatc 180
 acggccgtca cccactgct cgccacactg agcagtgcc acctggcctt catgaccttc 240
 tcacgcatcc tcatgggctt gctccaagggt gtttacttcc ctgccctgac cagcctgctg 300
 tcgcagaagg tgcgggagag tgagcagacc ttcacctaca gcatcgtggg cgccggctcc 360
 cagtttgga cgctgctgac cggggcggtg ggctccctgc tcttggaatg gtacggctgg 420
 cagagcatct tctatttctc cggcggcctc accttgcttt ggggtgtggtg cgtgtacaga 480
 tctcatcctg gccttgggtg tcctggccca aagccggccg gtgtccaggc acagcagagt 540
 cccctggaga cggctcttcc ggaagcctgc tgtctgggca gccgtcgtct cccagctctc 600
 tgcagcctgc tccttcttca tcctcctctc ctggctgccc accttcttcg aggagacctt 660
 ccccgacgcc aagggtgga tcttcaacgt ggttccttgg ttggtggcga ttccggccag 720
 tctattcagc gggtttctct ctga 744

<210> 32
 <211> 247
 <212> PRT
 <213> homo sapiens

<400> 32
 Met Pro Ile Cys Thr Val Ser Met Ser Gln Asp Phe Gly Trp Asn Lys
 1 5 10 15
 Lys Glu Ala Gly Ile Val Leu Ser Ser Phe Phe Trp Gly Tyr Cys Leu
 20 25 30

Thr	Gln	Val	Val	Gly	Gly	His	Leu	Gly	Asp	Arg	Ile	Gly	Gly	Glu	Lys
		35					40					45			
Val	Ile	Leu	Leu	Ser	Ala	Ser	Ala	Trp	Gly	Ser	Ile	Thr	Ala	Val	Thr
		50					55					60			
Pro	Leu	Leu	Ala	His	Leu	Ser	Ser	Ala	His	Leu	Ala	Phe	Met	Thr	Phe
65					70				75					80	
Ser	Arg	Ile	Leu	Met	Gly	Leu	Leu	Gln	Gly	Val	Tyr	Phe	Pro	Ala	Leu
				85					90					95	
Thr	Ser	Leu	Leu	Ser	Gln	Lys	Val	Arg	Glu	Ser	Glu	Arg	Ala	Phe	Thr
			100					105					110		
Tyr	Ser	Ile	Val	Gly	Ala	Gly	Ser	Gln	Phe	Gly	Thr	Leu	Leu	Thr	Gly
		115					120					125			
Ala	Val	Gly	Ser	Leu	Leu	Leu	Glu	Trp	Tyr	Gly	Trp	Gln	Ser	Ile	Phe
		130				135					140				
Tyr	Phe	Ser	Gly	Gly	Leu	Thr	Leu	Leu	Trp	Val	Trp	Tyr	Val	Tyr	Arg
145					150					155					160
Ser	His	Pro	Gly	Leu	Gly	Cys	Pro	Gly	Pro	Lys	Pro	Ala	Gly	Val	Gln
				165					170					175	
Ala	Gln	Gln	Ser	Pro	Leu	Glu	Thr	Ala	Leu	Pro	Glu	Ala	Cys	Cys	Leu
			180					185					190		
Gly	Ser	Arg	Arg	Leu	Pro	Ala	Leu	Cys	Ser	Leu	Leu	Leu	Leu	His	Pro
		195				200					205				
Pro	Leu	Leu	Ala	Ala	His	Leu	Leu	Arg	Gly	Asp	Leu	Pro	Arg	Arg	Gln
		210				215					220				
Gly	Leu	Asp	Leu	Gln	Arg	Gly	Ser	Leu	Val	Gly	Gly	Asp	Ser	Gly	Gln
225				230						235					240
Ser	Ile	Gln	Arg	Val	Ser	Leu									
				245											

<210> 33
 <211> 1371
 <212> DNA
 <213> homo sapiens

<400> 33																	
atgttcccca	ggccaggggc	attgtccttg	acagtcagga	ggcatacccc	tcgccaggtg												60
gaaccaccct	gtgtatgcat	gacctgaca	agcaggcgcc	aggacagtca	ggaggccagg												120
cccgagtgcc	aggcatggac	ggggacgtg	ctgctgggca	cgtgccttct	gtactgcgcc												180
cgctccagca	tgccatctg	caccgtctcc	atgagccagg	acttcggctg	gaacaagaag												240
gaggccggca	tcgtgctcag	cagcttcttc	tggggctact	gcctgacaca	ggttgtgggc												300
ggccacctcg	gggatcggat	tgggggtgag	aagggtcatcc	tgctgtcagc	ctctgcctgg												360
ggctccatca	cggccgtcac	cccactgctc	gccacactga	gcagtgccca	cctggccttc												420
atgaccttct	cacgcatact	catgggcttg	ctccaagggg	tttacttccc	tgccctgacc												480
agcctgctgt	cgcagaaggt	gcgggagagt	gagcagacct	tcacctacag	catcgtgggc												540
gccggctccc	agtttgggac	gctgctgacc	ggggcggtgg	gctccctgct	cctggaatgg												600
tacggctggc	agagcatctt	ctatttctcc	ggcggcctca	ccttgctttg	ggtgtggtac												660
gtgtacaggt	acctgctgag	tgaaaaagat	ctcatcctgg	ccttgggtgt	cctggcccaa												720
agccggcccg	tgtccaggca	cagcagagtc	ccctggagac	ggctcttccg	gaagcctgct												780
gtctgggcag	ccgtcgtctc	ccagctctct	gcagcctgct	ccttcttcat	cctcctctcc												840
tggctgcccc	ccttcttcca	ggagaccttc	cccagcgcca	agggtgggat	cttcaacgtg												900
gttccttggt	tgggtggcgat	tccggccagt	ctattcagcg	ggtttctctc	tgatcatctc												960
atcaatcagg	gttacagagc	catcacggtg	cggaagctca	tgcaggggcat	gggccttggc												1020
ctctccagcg	tctttgctct	gtgcttgggc	cacacctcca	gcttctgtga	gtctgtggtc												1080
tttgcacacg	cctccatcgg	cctccagacc	ttcaaccaca	gtggcatttc	tgtaaacatc												1140
caggacttgg	ccccgtcctg	cgcgggcttt	ctgttttggtg	tggccaacac	agccggggcc												1200
ttggcaggtg	tcgtgggtgt	gtgtctaggc	ggctacttga	tggagaccac	gggctcctgg												1260
acttgctgtg	tcaaccttgg	ggccatcatc	agcaacctgg	ggctgtgcac	cttcctgggtg												1320
tttggacagg	ctcagagggg	ggacctgagc	tctacctatg	aggacctcta	g												1371

<210> 34
 <211> 456
 <212> PRT
 <213> homo sapiens

<400> 34

Met	Phe	Pro	Arg	Pro	Gly	Ala	Leu	Ser	Trp	Thr	Val	Arg	Arg	His	Thr
1				5					10					15	
Pro	Arg	Gln	Val	Glu	Pro	Pro	Cys	Val	Cys	Met	Thr	Leu	Thr	Ser	Arg
		20						25					30		
Arg	Gln	Asp	Ser	Gln	Glu	Ala	Arg	Pro	Glu	Cys	Gln	Ala	Trp	Thr	Gly
		35					40					45			
Thr	Leu	Leu	Leu	Gly	Thr	Cys	Leu	Leu	Tyr	Cys	Ala	Arg	Ser	Ser	Met
	50					55					60				
Pro	Ile	Cys	Thr	Val	Ser	Met	Ser	Gln	Asp	Phe	Gly	Trp	Asn	Lys	Lys
65					70					75				80	
Glu	Ala	Gly	Ile	Val	Leu	Ser	Ser	Phe	Phe	Trp	Gly	Tyr	Cys	Leu	Thr
				85					90					95	
Gln	Val	Val	Gly	Gly	His	Leu	Gly	Asp	Arg	Ile	Gly	Gly	Glu	Lys	Val
			100					105					110		
Ile	Leu	Leu	Ser	Ala	Ser	Ala	Trp	Gly	Ser	Ile	Thr	Ala	Val	Thr	Pro
	115						120					125			
Leu	Leu	Ala	His	Leu	Ser	Ser	Ala	His	Leu	Ala	Phe	Met	Thr	Phe	Ser
	130					135					140				
Arg	Ile	Leu	Met	Gly	Leu	Leu	Gln	Gly	Val	Tyr	Phe	Pro	Ala	Leu	Thr
145					150					155				160	
Ser	Leu	Leu	Ser	Gln	Lys	Val	Arg	Glu	Ser	Glu	Arg	Ala	Phe	Thr	Tyr
				165					170					175	
Ser	Ile	Val	Gly	Ala	Gly	Ser	Gln	Phe	Gly	Thr	Leu	Leu	Thr	Gly	Ala
			180					185					190		
Val	Gly	Ser	Leu	Leu	Leu	Glu	Trp	Tyr	Gly	Trp	Gln	Ser	Ile	Phe	Tyr
	195					200					205				
Phe	Ser	Gly	Gly	Leu	Thr	Leu	Leu	Trp	Val	Trp	Tyr	Val	Tyr	Arg	Tyr
	210					215					220				
Leu	Leu	Ser	Glu	Lys	Asp	Leu	Ile	Leu	Ala	Leu	Gly	Val	Leu	Ala	Gln
225					230					235					240
Ser	Arg	Pro	Val	Ser	Arg	His	Ser	Arg	Val	Pro	Trp	Arg	Arg	Leu	Phe
				245					250					255	
Arg	Lys	Pro	Ala	Val	Trp	Ala	Ala	Val	Val	Ser	Gln	Leu	Ser	Ala	Ala
			260					265					270		
Cys	Ser	Phe	Phe	Ile	Leu	Leu	Ser	Trp	Leu	Pro	Thr	Phe	Phe	Glu	Glu
		275					280					285			
Thr	Phe	Pro	Asp	Ala	Lys	Gly	Trp	Ile	Phe	Asn	Val	Val	Pro	Trp	Leu
	290					295					300				
Val	Ala	Ile	Pro	Ala	Ser	Leu	Phe	Ser	Gly	Phe	Leu	Ser	Asp	His	Leu
305					310					315					320
Ile	Asn	Gln	Gly	Tyr	Arg	Ala	Ile	Thr	Val	Arg	Lys	Leu	Met	Gln	Gly
			325						330					335	
Met	Gly	Leu	Gly	Leu	Ser	Ser	Val	Phe	Ala	Leu	Cys	Leu	Gly	His	Thr
			340					345					350		
Ser	Ser	Phe	Cys	Glu	Ser	Val	Val	Phe	Ala	Ser	Ala	Ser	Ile	Gly	Leu
		355					360					365			
Gln	Thr	Phe	Asn	His	Ser	Gly	Ile	Ser	Val	Asn	Ile	Gln	Asp	Leu	Ala
	370					375					380				
Pro	Ser	Cys	Ala	Gly	Phe	Leu	Phe	Gly	Val	Ala	Asn	Thr	Ala	Gly	Ala
385					390					395					400
Leu	Ala	Gly	Val	Val	Gly	Val	Cys	Leu	Gly	Gly	Tyr	Leu	Met	Glu	Thr
				405					410					415	
Thr	Gly	Ser	Trp	Thr	Cys	Leu	Phe	Asn	Leu	Val	Ala	Ile	Ile	Ser	Asn
			420					425					430		
Leu	Gly	Leu	Cys	Thr	Phe	Leu	Val	Phe	Gly	Gln	Ala	Gln	Arg	Val	Asp
		435					440					445			
Leu	Ser	Ser	Thr	His	Glu	Asp	Leu								
	450					455									

<210> 35

<211> 1182

<212> DNA

<213> homo sapiens

<400> 35

```
atgccatct gcaccgtctc catgagccag gacttcggct ggaacaagaa ggaggccggc 60
atcgtgctca gcagcttctt ctggggctac tgcctgacac aggttggtggg cggccacctc 120
ggggatcgga ttgggggtga gaaggtcatc ctgctgtcag cctctgcctg gggtccatc 180
acggccgtca cccactgct cggccacctg agcagtgcc acctggcctt catgaccttc 240
tcacgcatcc tcatgggctt gctccaagg gtttacttcc ctgccctgac cagcctgtg 300
tcgcagaagg tgcgggagag tgagcgagcc ttcacctaca gcatcgtggg cgccggctcc 360
cagtttgga cgctgctgac cggggcggtg ggctccctgc tcctggaatg gtacggctgg 420
cagagcatct tctatttctc cggcggcctc accttgcttt ggggtgtggta cgtgtacagg 480
tacctgctga gtgaaaaaga tctcatcctg gccttgggtg tcctggccca aagccggccg 540
gtgtccaggc acagcagagt cccctggaga cggctcttcc ggaagcctgc tgtctgggca 600
gccgtcgtct cccagctctc tgcagcctgc tccttcttca tcctcctctc ctggctgccc 660
accttcttcg aggagacctt ccccgacgcc aagggtctga tcttcaacgt ggttcccttg 720
ttggtggcga ttccggccag tctattcagc gggtttctct ctgatcatct catcaatcag 780
ggttacagag ccatcacggt gcggaagctc atgcagggca tgggccttgg cctctccagc 840
gtctttgctc tgtgcctggg ccacacctcc agcttctgtg agtctgtggt ctttgcata 900
gcctccatcg gcctccagac cttcaaccac agtggcattt ctgttaacat ccaggacttg 960
gccccgtcct gcgcgggctt tctgtttggt gtggccaaca cagccggggc cttggcaggt 1020
gtcgtgggtg tgtgtctagg cggctacttg atggagacca cgggctcctg gacttgctg 1080
ttcaaccttg tggccatcat cagcaacctg gggctgtgca ccttctggt gtttggacag 1140
gctcagaggg tggacctgag ctctacccat gaggacctct ag 1182
```

<210> 36

<211> 393

<212> PRT

<213> homo sapiens

<400> 36

```
Met Pro Ile Cys Thr Val Ser Met Ser Gln Asp Phe Gly Trp Asn Lys
 1          5          10          15
Lys Glu Ala Gly Ile Val Leu Ser Ser Phe Phe Trp Gly Tyr Cys Leu
          20          25          30
Thr Gln Val Val Gly Gly His Leu Gly Asp Arg Ile Gly Gly Glu Lys
          35          40          45
Val Ile Leu Leu Ser Ala Ser Ala Trp Gly Ser Ile Thr Ala Val Thr
          50          55          60
Pro Leu Leu Ala His Leu Ser Ser Ala His Leu Ala Phe Met Thr Phe
65          70          75          80
Ser Arg Ile Leu Met Gly Leu Leu Gln Gly Val Tyr Phe Pro Ala Leu
          85          90          95
Thr Ser Leu Leu Ser Gln Lys Val Arg Glu Ser Glu Arg Ala Phe Thr
          100          105          110
Tyr Ser Ile Val Gly Ala Gly Ser Gln Phe Gly Thr Leu Leu Thr Gly
          115          120          125
Ala Val Gly Ser Leu Leu Leu Glu Trp Tyr Gly Trp Gln Ser Ile Phe
          130          135          140
Tyr Phe Ser Gly Gly Leu Thr Leu Leu Trp Val Trp Tyr Val Tyr Arg
145          150          155          160
Tyr Leu Leu Ser Glu Lys Asp Leu Ile Leu Ala Leu Gly Val Leu Ala
          165          170          175
Gln Ser Arg Pro Val Ser Arg His Ser Arg Val Pro Trp Arg Arg Leu
          180          185          190
Phe Arg Lys Pro Ala Val Trp Ala Ala Val Val Ser Gln Leu Ser Ala
          195          200          205
Ala Cys Ser Phe Phe Ile Leu Leu Ser Trp Leu Pro Thr Phe Phe Glu
          210          215          220
Glu Thr Phe Pro Asp Ala Lys Gly Trp Ile Phe Asn Val Val Pro Trp
225          230          235          240
Leu Val Ala Ile Pro Ala Ser Leu Phe Ser Gly Phe Leu Ser Asp His
          245          250          255
Leu Ile Asn Gln Gly Tyr Arg Ala Ile Thr Val Arg Lys Leu Met Gln
```

260 265 270
 Gly Met Gly Leu Gly Leu Ser Ser Val Phe Ala Leu Cys Leu Gly His
 275 280 285
 Thr Ser Ser Phe Cys Glu Ser Val Val Phe Ala Ser Ala Ser Ile Gly
 290 295 300
 Leu Gln Thr Phe Asn His Ser Gly Ile Ser Val Asn Ile Gln Asp Leu
 305 310 315 320
 Ala Pro Ser Cys Ala Gly Phe Leu Phe Gly Val Ala Asn Thr Ala Gly
 325 330 335
 Ala Leu Ala Gly Val Val Gly Val Cys Leu Gly Gly Tyr Leu Met Glu
 340 345 350
 Thr Thr Gly Ser Trp Thr Cys Leu Phe Asn Leu Val Ala Ile Ile Ser
 355 360 365
 Asn Leu Gly Leu Cys Thr Phe Leu Val Phe Gly Gln Ala Gln Arg Val
 370 375 380
 Asp Leu Ser Ser Thr His Glu Asp Leu
 385 390

<210> 37
 <211> 1428
 <212> DNA
 <213> homo sapiens

<400> 37
 atggccgttg tctcagagga cgactttcag cacagttcaa actccaccta cggaaccaca 60
 agcagcagtc tccgagctga ccaggaggca ctgcttgaga agctgctgga ccgcccgcgc 120
 cctggcctgc agaggcccgga ggaccgcttc tgtggcacat acatcatctt cttcagcctg 180
 ggcattggca gtctactgcc atggaacttc tttatcactg ccaaggagta ctggatgttc 240
 aaactccgca actcctccag ccagccacc ggggaggacc ctgagggctc agacatcctg 300
 aactactttg agagctacct tgccgttgcc tccaccgtgc cctccatgct gtgcctggtg 360
 gccaaacttc tgcttggtcaa cagggttgca gtccacatcc gtgtcctggc ctcactgacg 420
 gtcacacctg ccactttcat ggtgataact gcaactggtga aggtggacac tttctcctgg 480
 acccgtggct tttttgcggt caccattgtc tgcatggtga tctcagcggg tgcctccact 540
 gtcttcagca gcagcatcta cggcatgacc ggctcctttc ctatgaggaa ctcccaggca 600
 ctgatatacag gaggagccat gggcgggacg gtcagcgcgc tggcctcatt ggtggacttg 660
 gctgcatcca gtgatgtgag gaacagcgcc ctggccttct tctgacggc caccatcttc 720
 ctcgtgctct gcattgggact ctacctgctg ctgtccaggc tggagtatgc cagggtactac 780
 atgagccctg ttcttgcggc ccatgtgttt tctggtgaag aggagcttcc ccaggactcc 840
 ctcagtgcgc cttcgggtggc ctccagattc attgattccc acacaccccc tctccgcccc 900
 atcctgaaga agacggccag cctgggcttc tgtgtcacct acgtcttctt catcaccagc 960
 ctcactatcc ccgcgctctg caccaacatc gactccctca acaagggtc gggctcactg 1020
 tggaccacca agtttttcat cccctcact accttcctcc tgtacaactt tgctgacctg 1080
 tgtggccggc agctcaccgc ctggatccag gtgccagggc ccaatagcaa ggcgctccca 1140
 ggggttcgtg tcttcgggac ctgcctcatc cccctcttcg tgctctgtaa ctaccagccc 1200
 cgcgtccacc tgaagactgt ggtcttcag tccgatgtgt accccgcact cctcagctcc 1260
 ctgctggggc tcagcaacgg ctacctcagc accctggccc tctctacgg gcctaagatt 1320
 gtgcccaggg agctggctga ggccacggga gtggtgatgt ccttttatgt gtgcttgggc 1380
 ttaacactgg gctcagcctg ctctaccctc ctggtgcacc tcatctag 1428

<210> 38
 <211> 475
 <212> PRT
 <213> homo sapiens

<400> 38
 Met Ala Val Val Ser Glu Asp Asp Phe Gln His Ser Ser Asn Ser Thr
 1 5 10 15
 Tyr Gly Thr Thr Ser Ser Ser Leu Arg Ala Asp Gln Glu Ala Leu Leu
 20 25 30
 Glu Lys Leu Leu Asp Arg Pro Pro Gly Leu Gln Arg Pro Glu Asp
 35 40 45
 Arg Phe Cys Gly Thr Tyr Ile Ile Phe Phe Ser Leu Gly Ile Gly Ser
 50 55 60

Leu	Leu	Pro	Trp	Asn	Phe	Phe	Ile	Thr	Ala	Lys	Glu	Tyr	Trp	Met	Phe
65					70					75					80
Lys	Leu	Arg	Asn	Ser	Ser	Ser	Pro	Ala	Thr	Gly	Glu	Asp	Pro	Glu	Gly
			85						90					95	
Ser	Asp	Ile	Leu	Asn	Tyr	Phe	Glu	Ser	Tyr	Leu	Ala	Val	Ala	Ser	Thr
			100					105					110		
Val	Pro	Ser	Met	Leu	Cys	Leu	Val	Ala	Asn	Phe	Leu	Leu	Val	Asn	Arg
			115				120					125			
Val	Ala	Val	His	Ile	Arg	Val	Leu	Ala	Ser	Leu	Thr	Val	Ile	Leu	Ala
	130					135					140				
Ile	Phe	Met	Val	Ile	Thr	Ala	Leu	Val	Lys	Val	Asp	Thr	Phe	Ser	Trp
145					150					155					160
Thr	Arg	Gly	Phe	Phe	Ala	Val	Thr	Ile	Val	Cys	Met	Val	Ile	Leu	Ser
				165					170					175	
Gly	Ala	Ser	Thr	Val	Phe	Ser	Ser	Ser	Ile	Tyr	Gly	Met	Thr	Gly	Ser
			180					185					190		
Phe	Pro	Met	Arg	Asn	Ser	Gln	Ala	Leu	Ile	Ser	Gly	Gly	Ala	Met	Gly
		195					200					205			
Gly	Thr	Val	Ser	Ala	Val	Ala	Ser	Leu	Val	Asp	Leu	Ala	Ala	Ser	Ser
	210					215					220				
Asp	Val	Arg	Asn	Ser	Ala	Leu	Ala	Phe	Phe	Leu	Thr	Ala	Thr	Ile	Phe
225					230					235					240
Leu	Val	Leu	Cys	Met	Gly	Leu	Tyr	Leu	Leu	Leu	Ser	Arg	Leu	Glu	Tyr
				245					250					255	
Ala	Arg	Tyr	Tyr	Met	Arg	Pro	Val	Leu	Ala	Ala	His	Val	Phe	Ser	Gly
				260				265					270		
Glu	Glu	Glu	Leu	Pro	Gln	Asp	Ser	Leu	Ser	Ala	Pro	Ser	Val	Ala	Ser
		275					280					285			
Arg	Phe	Ile	Asp	Ser	His	Thr	Pro	Pro	Leu	Arg	Pro	Ile	Leu	Lys	Lys
	290					295					300				
Thr	Ala	Ser	Leu	Gly	Phe	Cys	Val	Thr	Tyr	Val	Phe	Phe	Ile	Thr	Ser
305					310					315					320
Leu	Ile	Tyr	Pro	Ala	Val	Cys	Thr	Asn	Ile	Glu	Ser	Leu	Asn	Lys	Gly
			325						330					335	
Ser	Gly	Ser	Leu	Trp	Thr	Thr	Lys	Phe	Phe	Ile	Pro	Leu	Thr	Thr	Phe
			340					345					350		
Leu	Leu	Tyr	Asn	Phe	Ala	Asp	Leu	Cys	Gly	Arg	Gln	Leu	Thr	Ala	Trp
		355					360					365			
Ile	Gln	Val	Pro	Gly	Pro	Asn	Ser	Lys	Ala	Leu	Pro	Gly	Phe	Val	Leu
	370					375					380				
Leu	Arg	Thr	Cys	Leu	Ile	Pro	Leu	Phe	Val	Leu	Cys	Asn	Tyr	Gln	Pro
385					390					395					400
Arg	Val	His	Leu	Lys	Thr	Val	Val	Phe	Gln	Ser	Asp	Val	Tyr	Pro	Ala
			405						410					415	
Leu	Leu	Ser	Ser	Leu	Leu	Gly	Leu	Ser	Asn	Gly	Tyr	Leu	Ser	Thr	Leu
			420				425						430		
Ala	Leu	Leu	Tyr	Gly	Pro	Lys	Ile	Val	Pro	Arg	Glu	Leu	Ala	Glu	Ala
		435					440					445			
Thr	Gly	Val	Val	Met	Ser	Phe	Tyr	Val	Cys	Leu	Gly	Leu	Thr	Leu	Gly
	450					455					460				
Ser	Ala	Cys	Ser	Thr	Leu	Leu	Val	His	Leu	Ile					
465					470					475					

<210> 39

<211> 2316

<212> DNA

<213> Homo sapiens

<400> 39

ctgggactga cacgtggact tgggcgggtgc tgcccgggtg ggtcagcctg ggctgggagg
cagccccggg acacagctgt gccacgccg tctgagcacc ccaagcccga tgcagccacc

60
120

cccagacgag	gcccgcaggg	acatggccgg	ggacaccag	tggtccaggt	ggaaccaccc	180
tgtgtatgca	tgaccctgac	aagcaggcgc	caggacagtc	aggaggccag	gcccagatgc	240
caggcatgga	cggggacgct	gctgctgggc	acgtgccttc	tgtactgcgc	ccgctccagc	300
atgcccattc	gcaccgtctc	catgagccag	gacttcggct	ggaacaagaa	ggaggccggc	360
atcgtgtcca	gcagcttctt	ctggggctac	tgctgacac	aggttgtggg	cggccacctc	420
ggggatcgga	ttgggggtga	gaaggtcatc	ctgctgtcag	cctctgcctg	gggctccatc	480
acggccgtca	ccccactgct	cgcccacctg	agcagtggcc	acctggcctt	catgaccttc	540
tcacgcatcc	tcatgggctt	gctccaaggg	gtttacttcc	ctgccctgac	cagcctgctg	600
tcgcagaagg	tgccggagag	tgagcgagcc	ttcacctaca	gcctcgtggg	cgccggctcc	660
cagtttggga	cgctgctgac	cggggcgggtg	ggctccctgc	tcctggaatg	gtacggctgg	720
cagagcatct	tctatttctc	cggcggcctc	accttgcttt	gggtgtggta	cgtgtacagg	780
tacctgctga	gtgaaaaaga	tctcctctcg	gccttgggtg	tcctggccca	aagccggccg	840
gtgtccaggc	acagcagagt	ccccgggaga	cggctcttcc	ggaagcctgc	tgtctgggca	900
gccgtcgtct	cccagctctc	tgacgcctgc	tccttcttca	tcctcctctc	ctggctgcc	960
accttcttctg	aggagacctt	ccccgacgcc	aagggtgga	tcttcaacgt	ggttccttgg	1020
ttgggtggcga	ttccggccag	tctattcagc	gggtttctct	ctgatcatct	catcaatcag	1080
ggttacagag	ccatcacggt	gcggaagctc	atgcagggca	tgggccttgg	cctctccagc	1140
gtctttgtctc	tgtgcctggg	ccacacctcc	agcttctgtg	agtctgtggg	ctttgcatca	1200
gcctccatcg	gcctccagac	cttcaaccac	agtggcattt	ctgttaacat	ccaggacttg	1260
gccccgtcct	gcgcccgtct	tctgtttggg	gtggccaaca	cagccggggc	cttggcaggt	1320
gagggggcggg	cctctgtgcc	caggagtctc	cctgtctgtg	gggtttgagg	ccaccgaggt	1380
gctgcagggt	ggggttgtgc	ctcccttcag	aggggtccg	gggtgcagag	gagggcacag	1440
accccagagc	aggcccagga	gaggaggatg	gggctgcctt	ccaggttcca	ctggactttg	1500
ctgacggcag	gtggctcatg	agtcgccatc	tgccctgact	cacagatatg	ttcccatcct	1560
ggtagcccgag	ggtccccggg	ataccgcctg	gccccgtga	gtgccatgga	tgatgggggt	1620
ccttcttccag	ctcagcctcg	cctgggcccgg	cctgtggctc	ccattttcct	ttcagcggga	1680
caaaggggac	ttgttaccag	gccattttct	ggatggcctg	tgagatctct	gccccccaa	1740
gaccctccaa	gtctgagcct	gaccacagc	tgggacactt	gaattcaagc	ccttgggaac	1800
catgggggct	tctatcaggc	gctagatcgt	gggtgtgtgt	ctaggcggct	acttgatgga	1860
gaccacgggc	tcctggactt	gctgtttcaa	ccttgtggcc	atcatcagca	acctggggct	1920
gtgcaccttc	ctggtgtttg	gacagctca	gagggtggac	ctgagctcta	ccatgagga	1980
cctctagctc	ccaaccccac	agcctctcca	aggaccagg	cgccagcagc	cccgggacac	2040
aggggactca	gtgtgtggga	cttggctact	ccatgtcaga	cacacgagca	gagaggaaca	2100
caaaccactg	tggagcctga	agctccttaa	gaagagtcca	caacagctgg	tgggaggggtg	2160
gggtgggcct	gggtccagac	caggctcgtc	gctctctggg	cctcagtttc	cccaccttgc	2220
cagcgggctt	cggccctgtc	cttctcacag	gtctgtgtgg	cccgctcaagg	gtgggtgggg	2280
ttattggtag	taggcgcagc	ctcattttcca	ccacga			2316

<210> 40
 <211> 2316
 <212> DNA
 <213> homo sapiens

<400> 40						
ctgggactga	cacgtggact	tgggcgggtgc	tgcccggtg	ggtcagcctg	ggctgggagg	60
cagccccggg	acacagctgt	gcccacgccg	tctgagcacc	ccaagcccga	tgcagccacc	120
cccagacgag	gcccgcaggg	acatggccgg	ggacaccag	tggtccaggt	ggaaccaccc	180
tgtgtatgca	tgaccctgac	aagcaggcgc	caggacagtc	aggaggccag	gcccagatgc	240
caggcatgga	cggggacgct	gctgctgggc	acgtgccttc	tgtactgcgc	ccgctccagc	300
atgccatctc	gcaccgtctc	catgagccag	gacttcggct	ggaacaagaa	ggaggccggc	360
atcgtgtcca	gcagcttctt	ctggggctac	tgctgacac	aggttgtggg	cggccacctc	420
ggggatcgga	ttgggggtga	gaaggtcatc	ctgctgtcag	cctctgcctg	gggctccatc	480
acggccgtca	ccccactgct	cgcccacctg	agcagtggcc	acctggcctt	catgaccttc	540
tcacgcatcc	tcatgggctt	gctccaaggg	gtttacttcc	ctgccctgac	cagcctgctg	600
tcgcagaagg	tgccggagag	tgagcgagcc	ttcacctaca	gcctcgtggg	cgccggctcc	660
cagtttggga	cgctgctgac	cggggcgggtg	ggctccctgc	tcctggaatg	gtacggctgg	720
cagagcatct	tctatttctc	cggcggcctc	accttgcttt	gggtgtggta	cgtgtacagg	780
tacctgctga	gtgaaaaaga	tctcctctcg	gccttgggtg	tcctggccca	aagccggccg	840
gtgtccaggc	acagcagagt	ccccgggaga	cggctcttcc	ggaagcctgc	tgtctgggca	900
gccgtcgtct	cccagctctc	tgacgcctgc	tccttcttca	tcctcctctc	ctggctgcc	960
accttcttctg	aggagacctt	ccccgacgcc	aagggtgga	tcttcaacgt	ggttccttgg	1020

ttggtggcga	ttccggccag	tctattcagc	gggtttctct	ctgatcatct	catcaatcag	1080
ggttacagag	ccatcacggt	gcggaagctc	atgcagggca	tgggccttgg	cctctccagc	1140
gtctttgctc	tgtgcctggg	ccacacctcc	agcttctgtg	agtctgtggt	ctttgcatca	1200
gcctccatcg	gcctccagac	cttcaaccac	agtggcattt	ctgttaacat	ccaggacttg	1260
gccccgtcct	gcgccggctt	tctgttttgt	gtggccaaca	cagccggggc	cttggcaggt	1320
gaggggcggg	cctctgtgcc	caggagtccc	cctgtctgtg	gggtttgagg	ccaccgaggt	1380
gctgcagggt	ggggttgtgc	ctcccttcag	agggggtccg	ggtgtcagag	gagggcacag	1440
accccagagc	aggcccagga	gaggaggatg	gggctgcctt	ccaggttcca	ctggactttg	1500
ctgacggcag	gtggctcatg	agtcgccatc	tgccttgact	cacagatatg	ttcccatcct	1560
ggtagcccg	ggtccccggg	ataccgcctg	gccccgctga	gtgccatgga	tgatgggggt	1620
ccttcttcag	ctcagcctcg	cctgggcccg	cctgtggctc	ccattttcct	ttcagcggga	1680
caaaggggac	ttgttaccag	gccattttct	ggatggcctg	tgagatctct	gccccctcaa	1740
gaccctccaa	gtctgagcct	gacccacagc	tgggacactt	gaattcaagc	ccttgggaac	1800
catgggggct	tctatcaggc	gctagatcgt	gggtgtgtgt	ctaggcggct	acttgatgga	1860
gaccacgggc	tcctggactt	gcctgttcaa	ccttgtggcc	atcatcagca	acctggggct	1920
gtgcaccttc	ctggtgtttg	gacaggctca	gagggtggtg	ctgagctcta	cccatgagga	1980
cctctagctc	ccaaccccac	agcctctcca	aggaccagg	cgccagcagc	cccgggacac	2040
aggggactca	gtgtgtggga	cttgggtcact	ccatgtcaga	cacacgagca	gagaggaaca	2100
caaaccactg	tggagcctga	agctccttaa	gaagagtcca	caacagctgg	tgggaggggtg	2160
gggtgggcct	gggtccagac	caggctcgct	gctctctggg	cctcagtttc	cccaccttgc	2220
cagcgggctt	cggccctgtc	cttctcacag	gctggtgtgg	cccgtcaagg	gtgggtgggg	2280
ttattggtag	taggcgcagc	ctcatttcca	ccacga			2316